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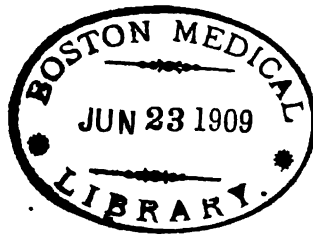
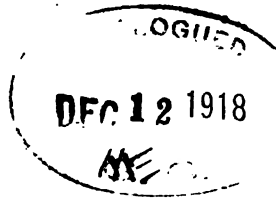


THE JOURNAL
OF
SURGERY
GYNECOLOGY
AND OBSTETRICS

WM. FRANCIS HONAN, M. D., EDITOR
GILBERT FITZ-PATRICK, M. D., ASSOCIATE EDITOR

VOL. XXIX.

1907
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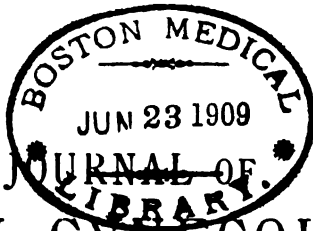
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JANUARY, 1907.

VOL. XXIX.

THE PROPRIETY OF REMOVING THE UTERUS,
FOR NON-MALIGNANT DISEASES.*

BY HOMER I. OSTROM, M. D.

The proneness of the uterus to the development of malignant diseases; the insidiousness of such development, and the frequency with which the initial stages may be masked, and overlooked, place this organ under the ban of suspicion, and make it almost incumbent upon us to regard it guilty until we have proven it innocent of pathological offense. The proposition, therefore, that the uterus, in the light of preventive medicine, demands our vigilant attention, is coupled with the further corollary, that radical methods of treatment may be justified and made obligatory before pathological histogenesis has been demonstrated; at a period antedating the recognizable cellular changes that are the tangible evidences of malignancy.

This obligation is additionally weighted by the position of the uterus and the anatomical relations it bears to other pelvic organs, not alone by actual contiguity, but more especially through its lymph and blood channels, which directly or in-

* Presented at the Surgical and Gynecological Association of the American Institute of Homeopathy, September 10, 1906.

directly establish communications between the uterus and remote parts.

By radical treatment I mean nothing less than removal of the uterus; getting rid of a local condition that before we are aware may become disseminated, and pass beyond the possibility of eradication, for until internal medicine can offer more certainty than at present, in the treatment of malignant diseases, we have no other resource than removal of the pathological focus; and until the statistics of this *dernier ressort* can give a more favorable showing, our hope must lie in anticipating the transition period, marked histologically by the earliest departure from normal cell manipulation, and structural arrangement, and clinically by well-marked manifestation of irregular functional activity.

Detailed examination of these two evidences of uterine disease would require more time than lies at my disposal, but to emphasize the contention I will ask you brief consideration of both phases of derangement, and in doing so, let us reverse the above order, and weigh the clinical aspect first. This is of necessity one with the functional life of the uterus, as all abnormal action finds its prototype in normal processes.

One fact impresses us most forcibly in contemplating the organism as a whole, and that is, that it is made up of many parts, each one passing through definite stages of development towards maturity, which consists in the ability to assume and perform full functional activity. Thus much the uterus possesses in common with other organs. It reaches its maturity by well-marked stages, and when fully developed has a certain definite function to perform. But here the analogy ceases, rendering the uterus an organ peculiar to itself, with no counterpart among other organs.

After attaining its full functional capacity at puberty, that is the ability to house the growing embryo, the further exercise of this function is spasmodic, depending upon a combination of circumstances not entirely under the control of the individual. In one instance there is an aborted preparation for reproduction—menstruation—in which the unimpregnated ovum occupies the uterus, and is cast off without further development. With considerable justice it is held that the natural woman should never menstruate, this process showing a missed opportunity for fecundation—the normal function of the uterus.

In another instance the activity of the uterus depends upon the necessarily spasmodic act of impregnation, an act that will become increasingly irregular, and attended with more and more uncertainty as economic problems multiply, and the sanctity of the family is overshadowed by an undue regard for social utility.

All pathological processes have their origin in physiological processes, and both are maintained by the same forces, in one instance making for health, in the other opposed to organic equilibrium. The bearing of the normal irregular and spasmodic uterus, and its aborted function—abnormal—upon the development of disease, lies in the fact that the cellular changes involved in such frustrated efforts, the falsely incited histogenetic cycle may easily get the organ out of order, and give rise to erratic and purposeless exhibitions of functional energy.

Now here is the pith of the matter, and the significance of the clinical phenomena of irregular uterine discharges that are liable to follow abuse of the uterine function, for no such out-of-time discharges, sanguineous or otherwise, can be present without a corresponding cellular and structural cause, and while every such uterine discharge is not to be looked upon as indicative of gravity, such discharges within the child-bearing period, or after the uterus should have ceased its function and folded up its cellular activity, impose upon us the obligation of careful and prompt investigation, especially if associated with trauma, infection, or a dyscrasia.

The unfortunate fact remains, that pain, or any considerable degree of suffering, our sheet anchor in the early diagnosis of malignant diseases in many other organs, does not warn us of the incipient stages of malignant diseases of the uterus; even discomfort is rarely present, the first indication of impending danger commonly being prolonged menstruation, its irregular occurrence, or a bloody discharge after the climateric has passed.

Therefore, these symptoms assume a position of the first importance in gynecological diagnosis, and should never be neglected, or passed over with the assurance, that "nature will right herself," or that "the change of life is not quite over," until their cause has been ascertained. Experience emboldens me to maintain the radical position, that the above clinical picture, even though the expression of a simple inflammatory

process, cannot long continue as such. Errors in cell life, and proliferation, by virtue of pathological laws, tend to a profounder departure from the normal standard, atypical formations being the rule of pathological growth, and thus, while the early symptoms do not materially change, or increase in violence, the uterine discharge as to the admixture of blood, or muco-purulent matter remaining about the same, the pathology may become graver, and less and less within the possibilities of recovery.

This ante-malignant stage, not the post-malignant development, the border land between health and disease, a stratum not added to, but a continuation of normal cell genesis, susceptible to further degenerative forces, unknown it may be, is where gynecology will achieve its most brilliant successes, and is the one that especially concerns us in regard to the advisability of removing the uterus for non-malignant diseases. I am increasingly possessed with our obligation to take advantage of what we may call "the indifferent period," and remove the uterus if there is the least suspicion that the local condition tends to the development of malignancy. When clinical and microscopical diagnosis are based upon irregular function and erratic cell life, the chances are greatly against a return to the normal state, and true conservatism points to the removal of the possibly neoplastic center.

The crucial test of malignancy before systemic involvement, or of incipient malignancy, should be structure, and it may be confidently anticipated that our methods of investigation and our knowledge of pathology will in the future be able to give us more accurate and trustworthy data; at present, however, important links are missing in the pathological chain, and we are obliged to grope somewhat in the dark for positive evidence of the histological changes that precede malignancy, or even of the earliest cell manifestations of malignant degeneration.

We cannot say in exactly what malignant structure consists, or what is the incentive for cells to depart from their hereditary obligation. Malignancy is clinical, it is not only the focus of cell degeneration, and does not exist until the entire system is invaded, not necessarily by the neoplasm, though more or less of this process forms a part of the picture; it is the dissemination of a fatal ptomaine, generated in some manner at the neoplastic

center. The ptomaine increases in direct ratio with the pathological growth, overpowering the vital forces, and arresting metabolism to such a degree as to induce death.

Trauma, followed almost necessarily by infection, with the attempt of a below-par state of the system to repair the damage, plays an important part in the local changes, and offers the most acceptable hypothesis of the primary cause of malignant neoplasms; certain it is that many of the cases of malignant disease of the uterus tally with such a history.

Let us take an illustration, simple inflammation of the endometrium,—endometritis,—or cervical endometritis. This is usually the result of infection following trauma, or of a dyscrasia, or of an alteration of the chemical composition of the secretion of the uterus and vagina. Removal of the epithelial covering follows, and by successive stages, inflammation of the deeper structures, with erratic cell multiplication, and glandular hyperplasia. We finally have a condition of the glands with difficulty distinguished from adenoma, a lawless proliferation of epithelial cells not in accordance with physiological use, and an arrangement of these cells in the cellular tissue—the stroma—that strongly suggests the lawless and aimless construction of malignancy. But thus far the process is local, confined to its primary focus, and not active enough to generate sufficient toxine for systemic dissemination.

We have here conditions that may easily, by the continuation of erroneous impressions, or the supervention of injury, develop a construction that is associated with malignancy, and such a pathology, with its sanguineous, and muco-purulent discharge, is but too frequently the initial stage of uterine cancer.

Before this stage is reached, if happily we have been able to make a diagnosis of the impending danger, while the disease is non-malignant, is it advisable to remove the uterus? Of this we will be assured, we must either remove the local pathology—cure the disease—or remove the uterus, and if after less radical methods of treatment, local and constitutional, thorough curettement, possibly cataphoresis will form an important part of the treatment, there is no improvement, I believe it is safer to remove the entire uterus, for by so doing the possibility of further development is eliminated. Far better that a woman should be deprived of her right to maternity, than run the

risk of cancer, recognized when even a radical operation cannot avail to cure, or save life.

Amputating the lower segment of the uterus may arrest the pathological process, but dissemination from the cervix is much earlier, and more rapid than from the fundus, and I cannot reconcile my duty to my patient with assuming the risk that is involved in allowing any portion of the uterus to remain, that may contain the germs of further disease. But little is gained by the cervical operation save the additional surgical risk, and this is really very slight, for the one object, not to destroy the chances of maternity, is frequently not obtained, inasmuch as the cervixless uterus is usually unable to carry its fetus to full term. Therefore, when an operation is called for, I believe hysterectomy will usually be the conservative method of treatment.

In deciding upon such radical treatment we will of course take into consideration the age of the patient, which will be significant, and whether or not she has borne children; if these accumulated data are favorable to malignant degeneration, it is our duty to advise the removal of the uterus. It is true, we may operate in some cases unnecessarily, but these can be lost sight of in the wider spread benefits that follow such radical and thorough methods.

Still another illustration of persistent hemorrhage that attends an abnormal state of the uterus, by which the uterus does not contract, and its blood channels in consequence remain more or less open—*metrorrhagia myopathica*. The endometrium is but slightly affected in this disease, which is manifest at the close of the child-bearing period, and does not seem to bear any proportionate relation to the parity of the uterus, but aside from the dangerous anemia that necessarily follows the prolonged loss of blood, I cannot avoid the feeling that there is a very positive risk in not removing an organ so profoundly diseased. Here the musculature and the elastic fibers are permanently affected, and we are in possession of so little positive knowledge concerning the antecedents of malignant degeneration, that the conservative course will be to remove the uterus as soon as the diagnosis is confirmed. No half-way measure can be trusted to cure. The danger of further degeneration being present, nothing less than a hysterectomy can safely be trusted.

Though early and rapidly fatal, it seems fitting to include *deciduoma malignum* in the present discussion, for the reason that its chief symptom, persistent hemorrhage, may mask all the other symptoms, and lead to an error in diagnosis unless the attendant conditions are taken into account. Appearing a few weeks after delivery, abortion, or especially a vesicular mode, uterine bleeding that is not controlled by the usual internal and local treatment should lead to a prompt curettement of the uterine fundus. It is thus demonstrated that the cervix is not involved, and the tumor removed from the interior of the uterus, which is large and heavy, is soft, spongy, and friable, bleeding profusely. Microscopically it bears a close resemblance to the syncytium—atypical in structure—from which it probably springs, thus establishing the fetal origin of the neoplasm, the maternal tissue being involved secondarily.

The only hope of saving life is in the complete removal of the uterus without delay. Even this holds out little prospect of permanent benefit, so rapidly does the local pathology extend, invade, and penetrate the uterine musculature, giving rise to metastatic tumors in remote organs.

Hysterectomy for *deciduoma malignum* should be total, including the ovaries, the broad ligaments, and as much peritoneum and periuterine tissue as possible, for the disease shows especial proneness to involve the peritoneal covering of the pelvis. The abdominal route, though severer than the vaginal, affords the best access to the diseased structures, and facilitates their more thorough removal. It should therefore be given the preference over the vaginal operation. In some instances a combined abdominal and vaginal technique is to be preferred.

While discussing the propriety of removing the uterus for non-malignant diseases that in their early stages are characterized by hemorrhage, we will remember that rather rare, and but recently differentiated disease, *arteriosclerosis of the uterus*. This malady closely resembles metrorrhagia myopathica, but differs especially in the hyperplastic changes in the media and adventitious coats of the vessels, which reduce their contractile power and favor capillary hemorrhage. The diagnosis will rest largely upon the exclusion of all other sources of bleeding, the scrapings of the endometrium not containing sclerosed vessels. Here again it is impossible to say that the pathology will

long be confined to the blood vessels, and with this uncertainty, if the disease cannot be cured by other means of treatment,—curettement, etc.,—removal of the uterus is justified.

We will occasionally meet with a case of chronic metritis that resists every method of treatment. The inflammation is caused by an infection, against which there seems not to be sufficient phagocytism for its control. The large heavy uterus, with local and reflex symptoms, reduces life to a miserable existence. Such patients should be offered the benefits of a vaginal hysterectomy. The ovaries need not be sacrificed, and the operation, excluding the unknown personal equation, will restore health and make life worth living again.

Primary tuberculosis of the uterus is so rare, that its treatment by removal seems scarcely to call for mention. Should it be encountered, hysterectomy, including the adnexa, must be unhesitatingly performed.

In closing, we may well consider the propriety of removing the uterus when the question of malignancy is less likely to enter into the proposition.

The necessity of operating upon fibroids for other than the mechanical inconvenience they cause, is still open for discussion. Until recently uterine myomata have been classed among the benign neoplasms, but the possibility of malignant degeneration and its occurrence are receiving frequent confirmations, and it is now apparent that we have in this condition more vital problems to deal with than the simple ones of mechanical pressure, and prospective obstruction. It is very possible that certain structural neoplastic forms are more favorable than others to degeneration, but these we have no positive means of diagnosing before removal. It would therefore seem the part of prudence to get rid of all fibroid tumors of the uterus, either by hysterectomy, or myomectomy. Any neoplasm is a criminal in the physiological organism, and as such must be brought within physiological laws, prevented from contaminating the system, or secured from further degeneration by removal. If the former cannot be done, methods looking to the accomplishment of the latter must be instituted.

The strong probability that a single, or even several foci do not express the full neoplastic energy of the uterus, speaks rather in favor of removal of the entire organ.

So many cases are recorded in which enucleation of myomata has necessitated a second operation for complete amputation, or in which supravaginal hysterectomy has been followed by the development of fibroids in the cervical stump, that I rather feel that panhysterectomy, unless under exceptionable conditions, is the procedure of election.

Removal of the prolapsed uterus is at times the only method

of cure, and is advisable, *first*, in women past the child-bearing period, after all other treatments have failed to keep the organ in position. *Second*, in women whose means of livelihood require manual labor and prolonged standing. In such the uterus is subinvolted, large and heavy, and no mechanical contrivance, pessary, or tampon, and no suspending operation, ventro-suspension, or shortening the round ligaments, will for any length of time hold the uterus in its place. *Third*, intractable cases of retroflexion, in which the posterior wall of the lower segment has become so thin that it continually collapses, reducing the caliber of the cervical canal, with consequent obstructive dysmenorrhea, causing congestion and hypertrophy of the fundus. Nothing less than removal will cure these cases.

Uterine diseases characterized by dysmenorrhea, in which the question of malignancy is not likely to arise, may require the radical operation of hysterectomy. Chief among these will be the undeveloped uterus—*uterus fatalis*. Here an entirely inadequate organ has forced upon it a function that it is not able to perform. Ovulation is usually perfect, ovaries and tubes being normal, but the periodic development of the uterus for impregnation, or for the nourishment and care of the fetus, are impossible, neither musculature, vascular supply, nor lining membrane have evolved beyond the infantile type, and therefore are not fitted to perform a mature function. Carrying a child to full term is the sole cure that nature offers, and it goes without saying that only the less severe cases can conceive and carry fetation to a successful termination.

Of course every means will be exhausted before resorting to the mutilation of removal; hygiene, massage (Brandt's system) electricity, possibly internal medication, but in true cases of infantile uterus all will fail, and to relieve the dysmenorrhea, and consequent nervous exhaustion, it may be necessary to get rid of the overtaxed organ. The ovaries will not necessarily be included in the amputation.

Permit me a final word in regard to the effect upon the organism of removing the uterus. There is nothing to prove that the uterus has any other function than to house, and furnish channels for the nourishment of the product of conception. Biology, embryology, and physiology point to nothing more. Its removal therefore can have no other effect than to prevent the accomplishment of reproduction, and deprive a woman of maternity. Unlike the ovaries, sex characteristics are not dependent upon the uterus, nor are they maintained by it, therefore, in considering a total hysterectomy we have to regard the benefit to the patient, and weigh against this only the ordinary surgical risk, reduced almost to a minimum in recent years, and the personal equation which enters into every operation, and which can never be exactly predicted.

APPENDICOSTOMY.

BY WM. FRANCIS HONAN, M. D.

The more or less intimate communication with the tropics and semitropics during and following the war with Spain brought to the attention of our clinicians many cases of chronic diarrhea and dysentery which did not respond very kindly to the apparently indicated treatment. Careful studies of the pathological states in these conditions showed them to be different types of colitis due to local infections of the colon. Chronic forms of dysentery were found to be due to the presence of the *Amæba Coli* whose habitat was found *post mortem* to be in the *Caput Coli*, therefore high colonic flushings with appropriate medicated solutions seemed to be a logical treatment. Only a varying degree of success, however, followed this procedure, and the right artificial anus suggested by White seemed to be a hopeful method of cure but a disagreeable complication during the convalescence. Gibson of St. Luke's Hospital, New York, then suggested that through an intermuscular dissection the cæcum could be brought through and the Kader plan of gastrostomy practiced, making a valvular colostomy. Bolton put this plan into immediate operation and demonstrated the curability of medicated solutions in colitis, which introduced at this point, would pass through the entire length of the large intestines. It was while about to do a valvular colostomy after the Gibson plan that the idea presented itself to Weir to use the appendix vermiformis as a channel to irrigate the colon. He then and there performed this operation, which Willy Meyer afterwards called appendicostomy. The reports of cases of amœbic dysentery and chronic diarrhea collected by Drs. Jas. P. Tuttle, Meyer, Gant, Arthur, and military surgeons in the tropics, treated by appendicostomy and irrigation, show most gratifying results and illustrate the applicability of the operation to those cases which resist medical treatment. Except for the sake of interest to add that the solutions generally found useful were cold water, saline, quinine 1-2000, nit. of silver, etc., we will consider that the sphere of the usefulness of the operation in these conditions is fairly settled. It is to another form of colitis seen very fre-

quently in this country that I desire to invite attention, and that is the condition known variously as mucous disease, mucous colic, pseudo-membranous colitis, chronic colitic, etc. This disease has been described as far back as 1854 by Fernelius, and in a classic article in this country in 1871 by Da Costa. It is a condition most extensively discussed by Boas, Nothnagel, Van Norden, and Wesphalen abroad, and by Einhorn, Mendelson, and Hemmeter in this country. The occasion of the discussion is the difference of opinion as to the pathology of the disease. Nothnagel, Ewald, and Hemmeter are inclined to make two divisions of the disease; those in which there is considerable pain with passage of lumps of mucus are called mucous colic and are regarded as an intestinal neurosis, and secondly, those in which there is a little pain and the passage of a membrane are classed as enteritis membranacea and are considered due to anatomic alterations. Others regard the affection as a neurosis affecting both sensibility and secretion. Van Norden in a recent monograph states very decidedly that the condition is purely neurotic and in no post-mortem examinations has he found any evidences of the inflammatory changes in the mucosa, though the mucus is adhered so tightly to the gut that a stream of water from a garden hose is not sufficient to dislodge it from the cut post mortem specimen. Patients suffering from this disease are about 80 per cent. neurotic women; displacements of the uterus have been given as a cause for the high percentage in the female sex, and there has also been an accompanying constipation. Lorguet and Ulman noticed this condition in newborn children; Boas reports a case in a girl of two years whom he describes as neurasthenic. Comby and Lowenstein report cases occurring in early childhood. Patients of this type usually suffer for a long time from constipation before the typical attack of mucous colic appears. The attack is preceded by frequent pains located in the transverse colon. These pains become aggravated to such an extent that the patient seems about to die. A patient who has never had such an attack before may give the impression of suffering from gall stones or renal calculi. Hemmeter reports a case of pain lasting four days, no mucus being passed after calomel and castor oil; on the fifth day the patient passed a perfect cast of the colon 22 inches long. A boy whose case is reported by Foster was seized with violent vomiting and intense abdominal

pain, was relieved of his trouble by the passage of a mass of mucus the size of a pear. Eccles tells of a patient who had a tumor in the transverse colon which was regarded as malignant; this suddenly disappeared and the mass passed per rectum consisted of filaments of mucus kneaded together, resembling a ball of vermicelli. The pain preceding the passage of mucus almost caused collapse of the patient and suggests perforation of the bowel. It is usually most severe in the ascending colon, radiating down the cecum and resembling the pain of appendicitis, in fact the association of these two diseases is common. The sudden severe pain, rigidity of the abdominal walls, tenderness over the cecum, may suggest colitis as has been recently pointed out by a noted French surgeon, claiming that in this country many such cases are operated on for acute appendicitis. I have mentioned above that this condition has been noted in infants and small children and that they are neurasthenic or of such heredity and I desire to call attention to one case that came under my observation.

The trouble in this case began at three months in a female child who had been on Eskay's food from the time she was one week old. She began to suffer with pain especially at night, with great restlessness. This pain Van Norden claims is due to the spasm of the muscle fibers of the colon. Then would come acute attacks with vomiting, diarrhea, high fever, etc., which usually yielded in a short time to ordinary homeopathic remedies, except the nocturnal pain and restlessness. She was then fed with diluted cream, afterwards with modified milk, and finally Holt put the child on one feeding of malted milk per day. But no change of food influenced the constipation. Subsequently long-cooked strained oatmeal made her thrive temporarily. This condition with frequent acute attacks appeared more or less regularly with varying degrees of severity always accompanied by constipation. Once the child apparently had a meningeal inflammation, for she was oblivious to surroundings for several weeks and exhibited an afternoon rise of temperature for three months. When I saw the case the child was two and a half years old, emaciated, every evidence of malnutrition, skin dry, harsh, and scaly, suffered with very severe abdominal pain at night and occasionally during the day, appetite poor, abdomen distended, tender, bowels moved only with difficulty after repeated enemata, colonic flushing every

day and dry tube being passed at night. Gas from rectum exceedingly offensive. After some persuasion on the part of the family physician I was allowed to carry out my suggestion of appendicostomy, but the mother insisted on a median abdominal incision to make the diagnosis positive. This was done with negative results. Through a stab wound over the usual site for an appendectomy the meso-appendix was ligated, and the base of the appendix where it joins the cecum attached to the parietal peritoneum and the distal portion of the appendix attached to the skin with a few sutures. It can be left *in situ* or the tip projecting above the skin can be amputated, with a Paquelin cautery and a bow knot of catgut placed about after its permeability into the cecum is established. In thirty-six hours the dressings are removed and you will have a mucus-lined canal leading into the caput coli and entirely extra-peritoneal. The child bore the combined operation well and in about ten days irrigations, first with saline solution and then oil (Kussmaul theory), finally weak silver nitrate or hydrastis, this latter seemed the best. The immediate effect was to clear the bowels of fetid gas, fecal matter, and some mucus. The nocturnal pain, which was severe and which necessitated an enema in the middle of the night, disappeared; the general condition became better, irrigations were performed about three times a week. The pain in the head, which was a frequent concomitant of the acute attacks with rise of temperature, disappeared; the skin became smooth and normal in appearance and touch. General condition improved and the child has grown and thrived so that now after twelve months the good effect is very noticeable and she goes about without any inconvenience from the small fistula. It has not leaked to any extent whatever, and has been free from the usual unpleasant consequences attendant upon a fecal fistula. The irrigations which were made through a small catheter were strenuously objected to usually, though there was not much evidence of pain. I am thoroughly satisfied with the results in this case and would heartily commend this procedure in any intractable case of mucous colic of either sex at any age. The father of the child noted above recently reported that he considered the child cured.

Recently Laplace of Philadelphia reports a case of epilepsy in which he made use of appendicostomy and subequent irriga-

tion of the colon, on the theory lately advanced that that disease is dependent upon toxin in the blood due to auto-intoxication from the intestines. Sufficient time has not elapsed to develop the utility of this means of combating that frightful curse to humanity, but the report is to an extent hopeful. Certainly organic and functional nervous diseases possess radically fundamental differences in their natures, nothing being in common between them but the production of nervous symptoms. Organic brain diseases are due to a demonstrable lesion or injury or to a degeneration of some part of the nervous structure, while a functional disease has nothing to do with changes in the brain texture but to a toxemia.

The exciting causes of epilepsy are numerous, but according to Thompson, who quotes from other authorities, the most important factor is a toxin in the blood. An organic nervous disease is due to actual change and is permanent, while intermittency is a characteristic of all forms of functional disorders. There is nothing in the whole range of pathology that explains intermittency by a toxic condition (Thompson). The same is true of neurasthenia and hysteria. Referring to Powlow we see in the organs of the intestinal tract a more or less constant generation of toxins in which the liver takes a very important part. Epilepsy treated along these lines has given good results and those patients have an opportunity for better and more scientific therapeutics than the routine bromide treatment offers. Appendicostomy is offered for your consideration in those particularly obstinate and intractable cases where drainage and local medication of the colon are desired. I have under observation a case of epilepsy with a history of injury which was trephined without influencing his epileptic seizures. While not being a very favorable case for this form of treatment, nevertheless appendicostomy was tried with very encouraging results. The attacks which came about four times a week now appear only occasionally and are not severe. This part of the subject is of the greatest interest and we are encouraged to hope for new and happy experiences in the treatment of epilepsy.

EXTRA-UTERINE ECTOPIC PREGNANCY. A CASE:
PAST FULL TERM OF UTERO-GESTATION.
OPERATION: RECOVERY.

BY WILLIAM DAVIS FOSTER, M. D.

The earliest account of this accident is mentioned by Albucasis, an Arabian writer, in the eleventh century. It is mentioned by Polinus and Cordæus in the sixteenth century. Cordæus records a case in which the fetus was converted into a lithopedion and carried in the abdomen twenty-eight years. Horstius, in the sixteenth century, also gives the history of a woman who conceived for the third time in 1547, and in 1563—sixteen years after—the remains of the fetus were still in the abdomen. In 1557 Israel Suach published a work on gynecology in which he figures a lithopedion *in situ* in the case of a woman with her belly laid open. Surgical literature later records many remarkable examples of cases illustrating this subject. Among the older writers who mention this form of fetation, are included Mauriceau, de Graaf, Salmuth, Hanneus, Bartholinus, and many others. The early writers spent much time and fell into dire confusion in attempts to elucidate the classification, causes, symptoms, diagnosis, prognosis, and treatment of extra-uterine pregnancy. At the present day, however, the whole subject has been illuminated by careful observers and is well understood. It appears that this accident usually occurs in women who have been previously sterile.

Parry states that the interval between marriage and the first impregnation is frequently long. If the women have borne children, a period of sterility frequently precedes the extra-uterine pregnancy.

St. Morressy, Lobstein, Hughes, and Sager have each observed an interval of five years between marriage and conception. A patient of Ramsbotham and Adams was married eight years, Grossi's nine, Putnam's ten, and Hutchinson's and Parry's each eleven years without conception. Bamberger's patient had been twice married, and in all had had between thirteen and fourteen years of matrimonial life without becoming pregnant. Jewett's was sixteen, Poteau's and one of Parry's each eighteen, and Allport's, Painter's, and Fothergill's

each many years married before they conceived. In these instances the extra-uterine was the primary conception.

Among women who had previously borne children, Sinclair, Tuffnell, and Roberts observe intervals of seven years between the last normal and the extra-uterine conception. Tait records a case of eight years; Fleuriot and Barclay each one of nine; Fil-liter, Thompson, and Stiles each one of ten; Rugé one of eleven; Simpson one of twelve years; Blache, Drejer, and Janvrin each one of an interval of thirteen years, and Goodwin and Martin each one of fifteen; Marvin and Hemard each one of sixteen years; and Johnson one of twenty years. Finally Boehmerus has recorded the history of a prostitute who pursued her calling for the same period without becoming pregnant and then conceived, the child being extra-uterine.

In five hundred cases of extra-uterine conception collected without any selection, there were twenty-two cases of combined intra- and extra-uterine pregnancy. In other words in round numbers, two ova were fertilized at the same time in one out of every twenty-three gestations. In addition to this there were probably two cases in which two germs were fecundated and both remained outside of the uterus; but as these are somewhat doubtful they are not included in the calculation, and it may be assumed that twin extra-uterine pregnancy, both germs being developed outside of the uterine cavity, is certainly very rare. Churchill, the highest statistical authority upon obstetrics who has written in our language, says there is one twin in every seventy-five normal conceptions among British matrons; one in one hundred and eight among French; and one in every eighty-seven among German, or an average of one in ninety among the mothers in the three countries. From these data it would follow, that twin conceptions are about four times as frequent in extra-uterine as they are in normal fetations.

Formad, of Philadelphia, in a series of 3500 general autopsies, found thirty-five ectopic gestations.

Without burdening this paper with the various classifications which have been made, it is sufficient to say that none of these appear to the writer to afford convincing and unerring clinical conclusions. Prior to the year 1824, three species—the tubal, ovarian, and abdominal—were generally admitted to occur. Preschet then added a new one, now known as interstitial pregnancy. In 1837, Dezeimeris made a new arrangement

which may be called the anatomico-pathological;—it is extremely technical, and lends no assistance to the practitioner.

Tait asserts that there are only two forms of misplaced conceptions: in one the oviduct bursts, the peritoneum remaining uninjured, after which the ovum escapes into the broad ligament, between the folds of which its development continues. in the other variety the peritoneum is lacerated as well as the walls of the tube, and the ovum finds its way into the cavity of the abdomen. The first is the subperitoneo-pelvic pregnancy of the French authors, and the latter is the secondary abdominal pregnancy of Boehmer.

In 170 Petit ascribed the following peculiarities to misplaced pregnancies.

1. The menses, contrary to what is seen in normal gestation, continue to appear, but in small quantities, throughout the pregnancy.
2. The breasts do not enlarge or secrete milk as they do in uterine conceptions.
3. The gravid tumor is situated on one side, the fetal movements are felt on the corresponding side, and the woman has unilateral varices, cramps, and edema. Every surgeon of considerable experience is aware that Petit's conclusions were misleading and are now obsolete.

Diagnosis.—The diagnosis of an extra-uterine pregnancy is usually easy to make. The diagnostic signs vary, however, according to the advancement of the pregnancy and according as the sac is ruptured or unruptured, and the fetus alive or dead. The two important means of making the diagnosis are the history of the case and the physical examination; either of which may be sufficient alone, but both together afford a degree of certainty fully as great as that attained in the case of any other.

The diagnostic signs are the following:

1. Cessation of menstruation.
2. Other signs of pregnancy such as nausea, changes in the breasts, etc., and certain characteristic signs, often peculiar to the individual.
3. The patient often "feels different" in this pregnancy as compared with previous ones, and suspects that something is wrong.

4. Pains in the pelvis and the presence of a tumor, which is distinct from the uterus and sensitive upon pressure.

5. Sudden severe (agonizing) pain, often coming on during active exertion.

6. Patient is compelled to go to bed with marked anemia or in collapse.

7. Repeated attacks of pain and signs of pelvic peritonitis.

8. Constipation and dysuria.

9. Recurrence of irregular, more or less profuse, menstruation.

10. Discharge of decidual cast.

11. After rupture the patient may have hallucinations, often becomes weak and emaciated, and in some cases there is marked nephritis.

Objective signs:

1. Uterus enlarged to about the size of a two-months' pregnancy.

2. Formation of a tumor at one or the other side of the uterus.

3. Microscopic demonstration of the decidual nature of cast-off membrane.

4. Contraction of the uterus after casting off the decidua.

5. Occasionally contraction may be felt in the extra-uterine tumor.

6. If the pregnancy continues to develop, the abdomen increases in size and the fetus can be felt with great distinctness through the thin sac wall, and fetal heart-sounds are heard.

7. False labor which sets in from the seventh to the tenth month, followed by death of fetus and absorption of amniotic fluid, with rapid diminution in the size of the tumor. The dead fetus and the membranes may then remain in the abdomen innocuous for years, and excite a fatal peritonitis, or discharge the fetal bones through the abdominal walls or into the intestinal canal, bladder, or vagina (Kelly).

It would not, in the opinion of the writer, overshoot the mark to state that at the present time the diagnosis of extra-uterine pregnancy, prior to the rupture of the tube, is, in many cases yet, hard to make out. At the time, or subsequent to the rupture, the signs and symptoms of this anomaly are pretty distinct and ought not to leave much doubt as to the real condition.

Repeated extra-uterine pregnancies:

Cases are recorded in which an extra-uterine pregnancy has been observed twice in the same woman. Taylor, of Birmingham, had a patient who missed one menstruation, and when six weeks pregnant had a rupture, with the formation of a hematocele and peritonitis. Two years after, she had a ruptured extra-uterine pregnancy at five weeks, and when the abdomen was opened and the mass removed, the scar of the previous rupture was found in the tube.

Olshausen, at the meeting of the Berlin Obstetrical and Gynecological Society, 1899, exhibited a child in good condition and over a year old, delivered from a right tubal pregnancy. The month before the meeting he had operated successfully a second time upon the mother for a left tubal pregnancy in the fifth week. (See Vent. f. Gyn., 1890, p. 67.)

Hermann (Brit. Med. Jour., September 27, 1890) removed a ruptured tubal pregnancy, and three years later diagnosed an unruptured pregnancy of the opposite side. Coe furnishes a case in which there was an interval of twelve years between the two pregnancies (Trans. Amer. Gyn. Soc., 1893, XVIII., p. 268.)

F. Schauta (Lehrb. d. gesammamelte Gyn., 1895, p. 681) would explain this accident by the occurrence of a one-sided tubal catarrh offering an obstruction and causing a pregnancy on that side, followed at a later date by a catarrh of the opposite side with a pregnancy on that side.

Cases of repeated extra-uterine pregnancy have also been cited by Primrose, Davis, King, Campbell, Varnier, Magin, Galiay, Brown, Oulmont, Haydon, and others.

Treatment.—Various plans have been pursued in the past, viz.: destruction of the ovum by the medication of the mother; Heim and Osiander proposed to remove the fetal tumor by the bistoury, but do not tell us where to make the incision; puncture of the fetal cyst; removal of the embryo by section of the vagina; by galvanic cautery; introduction of galvanic and electric needles into the cyst; injections of narcotic substances into the cyst, compression of the tumor, and finally gastrotomy. By gastrotomy we now mean celiotomy-laparotomy.

The earliest case which we have been able to find upon record is that of Primerose, who operated in October, 1594. The history of this case has become classical. She was twice pregnant with extra-uterine children—first in 1591, and again

some time before 1594. The cyst of the first child opened spontaneously through the abdominal wall. The fistula was enlarged, and this child extracted by Jacob Noierus, a surgeon. This operation proving successful, Primerose removed the second infant by gastrotomy two months later. It is easy to imagine how he was led to perform the second and more hazardous operation. Felix Palterus reported another successful case only three years later. After this we have found no indication that the operation was performed for more than a century. In 1714 Calvo reported a case in France, and in 1764 Bard another in this country.

Mr. John Bard was a surgeon in New York, and we know of no one who operated in this country before him. The patient was a Mrs. Stagg, the wife of a mason, and the operation was performed several years before it was published, for Mr. Bard communicated an account of it to Dr. Fothergill, in a letter, which was dated on the 25th of December, 1759 (Parry).

On January 14, 1791, this operation was performed upon this side of the Atlantic for the second time, the subject of it being a Mrs. Cooke, the wife of a Virginia planter. The operation which was done by Dr. William Baynham, a country physician, was entirely successful. The same gentleman operated with the same happy result upon a negro slave on February 6, 1799. This was the fourth American gastrotomy for the removal of the extra-uterine fetus. The third one was performed by McKnight, and communicated to the famous Dr. Lettsom, by Dr. Mease of Philadelphia, and published in 1795. Dr. Baynham's cases are well worth attentive study. They illustrate the intrepidity and good judgment so often displayed by the provincial surgeon, who, separated by long distance from his fellows, often has to act in the greatest emergencies without the counsel which he may earnestly desire. Almost a quarter of a century passed before the operation was repeated in this country. On the 6th day of October, 1823, it was again performed by Dr. Wishart, likewise a country practitioner. The sixth American operation was performed on February 7, 1846, by Dr. A. H. Stevens of New York, a man who had all the advantages of a metropolitan experience.

Within the last few years all surgeons of considerable experience have had cases of extra-uterine pregnancy. The question of treatment is now fairly well established. After rupture im-

mediate operation is advised by all, The results of such proceeding are highly favorable to the patient. In those cases in which there has been long delay—going beyond the normal period of gestation and the fetus being dead—it is fairly certain that the operation of removing the fetus by laparotomy is much more favorable to the mother than operation at or shortly before full term when the child is alive.

No surgeon at this day doubts the advisability of removing the child through the abdominal incision. After the abdomen is open and the contents examined the broad ligaments should be clamped and the child and secundines then be removed. The bleeding vessels are secured with catgut ligatures, the uterus removed in the usual way.

It would be interesting to know the number of cases of extra-uterine pregnancy on record which reached and passed the full term of utero-gestation.

A case referred by Dr. Anderson, Seneca, Kansas,—History by patient's family physician:

Was called suddenly on the morning of December 28, 1905, to see Mrs. H., aged thirty-two, married ten years. Mother of one child six years old. Has had one miscarriage at three months without any apparent reason, about a year before the birth of the child.

I have known patient since a schoolgirl of fourteen, first acquaintance being when the menstrual function was established; she had slight trouble at that time and being away from home, came to me for assistance.

Soon after marriage she had a severe attack of rheumatism but employed another physician, coming to me soon after to correct an obstinate retroversion; became quite strong and went through confinement without trouble.

During the six years since the birth of child, they had depended upon abstinence for several days after menstruation and have used no other means to prevent conception.

When called on the morning of December 28, found her suffering intensely from pains extending over whole abdomen, but especially about navel, radiating to the shoulders and intercostal nerves. Patient almost shrieked at me when I entered the room, "Don't touch me—whatever you do, don't touch me"—so examination was out of the question until relief was obtained. The abdomen was tympanitic and excruciatingly

sensitive, face drawn and pinched and lips blue, pulse weak, temperature normal.

The following history was elicited after relief was partially obtained:—Normal menstruation had ceased on October 31,



Extra Uterine Pregnancy 14 days beyond full term. Foetus dead. Removed by Laparotomy. Recovery.

1905. At menstrual period she got quite wet and had taken a severe cold. Conception had taken place perhaps on the 6th of November. On December 5, had been taken suddenly with excruciating pains—sent for me but I was out of town; so

employed a young doctor who had given her three hypodermic injections of morphine, relieving the intense suffering, which resembled labor—there were left after this attack pains and soreness about the navel; pain at every movement of the bowels, pains on urinating, could hardly stand erect, and a persistent nausea. Ten days later there was a repetition of the extreme symptoms after which menstruation (?) occurred, two or three small clots passing. Her physician gave his opinion that she had aborted—if not she would, and advised curettement, which was not allowed. So at the fourth attack of pain—just four weeks from the first one—they decided to have me take the case.

Until the day before this attack she told me the bowels had moved every day—but the following day I advised flushing them with warm water, which brought no results—we repeated at short intervals for three days—using gallons of water and quarts of oil and perseverance. Most of the oil and water were retained—there seemed to be almost total paralysis of peristaltic action. The vomiting persisted, she retained neither food nor medicine, with many symptoms of peritonitis, but had nearly normal temperature through it all.

On the fourth day we began to get slight results from the enemas. On the night of the fifth day they phoned me she was sinking;—soon after I reached the house she screamed, and was relieved of an incredible amount of fecal matter and flatus, undigested food that had been eaten two weeks before.

The vomiting ceased, a fair recovery from this attack ensued, though nausea remained to some degree—with some discomfort of abdomen. With the positive diagnosis from the other physician that she had miscarried, and my own well-grounded opinion that she had not been pregnant;—that all the symptoms might be referable to impacted colon—I ventured to introduce the sound into the uterus and found it of normal depth at the second month of possible pregnancy. Nothing came of it; barring pregnancy, unless it might be extra-uterine. I watched the case with that possibility in mind. At the third month nausea ceased and the womb rose in the pelvic cavity. At the fourth month she felt life—the tumor plainly felt at that time was centrally located and no symptoms of normal pregnancy were lacking. I had to change my diagnosis.

I had a case where the patient herself had introduced a hard

rubber catheter into the uterus, allowing it to remain all night to produce abortion—with no result to herself or child. I thought I had had an escape of that kind.

During the winter and spring months the case progressed much after the manner of normal pregnancy. The patient did her own housework and walked to town, several blocks, several times. In March had another less serious attack, with stomach and bowels, lasting two or three days.

About the middle of June was called again. After a little extra work she had pains simulating labor, but no dilatation of os or escape of fluids. Os was patulous—uterus very high in vaginal dome—cervix, seemingly bent forward as if there was anterior flexion. I could feel no presenting part then, or at any other time, but could distinctly feel head of child above and to the right of umbilicus.

During the next two or three weeks the child changed position—the head descending and resting just above the pubic bones—the knees beating an almost constant tattoo on the ribs and adjacent soft parts at the rate of “sixty revolutions a minute” according to the mother’s feeling. The only unusual symptoms were the constant and painful movements of the child, and the distinctness with which the outline of the child could be discerned through the abdominal walls. I accounted for the one condition that the recurrent peritonitis had made her over-sensitive to every movement—and for the other that she was so poorly nourished that the walls were extremely thin.

The month of July was one long torture—I resorted repeatedly to the hypodermic to give the patient a little rest and sleep at night. The pain and movement of child were all above umbilicus by bimanual touch, no response at the os—uteri was noticeable.

I began to be very uneasy and suspicious, as the 13th of August drew near. Counting two hundred and eighty days from supposed impregnation, that would be the limit of her time. Three weeks before this I asked for council—not telling the doctor, however, of any suspicions I had. The consulting physician told the family that he could feel the presenting parts, and the patulous os, and gave as his opinion, labor would be complete in a day or two. He counseled patience. Just at this time a friend of mine in another part of the state had been wait-

ing six weeks for delivery, called a specialist, and he diagnosed the case as extra-uterine pregnancy—at full term, and they were preparing to operate when, two days later, she was delivered of a fine child, without serious trouble. I was afraid my interest and anxiety for my patient had biased my own judgment, to the point where I feared derision, if I should say that I thought I had something of the kind on my own hands. The time arrived for parturition, but it did not occur. The abdomen became more relaxed and flattened. The movements became feeble, consequently less suffering ensued. Patient began to eat and sleep better, and yet no labor and no presenting part were to be found by me. Six days after we expected labor, the movements ceased entirely, the child seemed to have exhausted itself. I again asked for council, telling the family my fears and also to the other physician called at this time. We made a careful and more thorough examination, entering the sound, found the uterus empty and measuring about five inches in depth. This physician believed my diagnosis to be correct, we removed her to University Hospital, in Kansas City, August 25, where operation was made later.

Operation.—On August 27,—being fourteen days beyond full term,—with the assistance of Drs. Anderson and Nickell, I opened the abdominal cavity and delivered a full-developed dead fetus, weight ten pounds. The cord was clamped and severed; further investigation disclosed the fact that the afterbirth was adherent to the abdominal wall, the intestines, omentum, uterus, and bladder. The omentum was extensively gangrenous; the necrosed parts were ligated and cut away: the broad ligaments were clamped and the afterbirth immediately delivered—care being taken in detaching the adhesions. Fortunately this was accomplished without serious injury to any of the viscera involved. Hemorrhage was free, but not to the extent of collapse. The cavity was packed with large hot abdominal sponges, the uterus dissected out in the usual way, and the broad ligaments and vessels ligated; the abdominal cavity was flushed with hot saline solution, some bleeding points were clamped with hemostats (left in), the cavity packed with three large abdominal hot sponges and the incision partially closed with through and through sutures—leaving the tapes exposed through the incision. Patient received on the table a saline infusion in the median vein and in the rectum a hot

saline enema of one pint and was put to bed in good condition. She rallied nicely from the operation. On the third day the packing and hemostats were removed under an anesthetic. The cavity was again thoroughly irrigated with hot normal saline solution and the dressing made in the usual way. On September 4, the sixth day after the operation, the packing was again removed under an anesthetic: a large segment of omentum, which looked suspicious at time of operation, was found necrotic, ligated and cut away; a large long curved glass drainage tube was inserted, the wound brought together with sutures and dressed. The drainage has been very free, consisting of sloughs from necrosed omentum of extremely offensive character. On September 6, the drainage tube was taken out, the cavity thoroughly irrigated with hot sterile water and calenduline, a shorter and smaller tube inserted and the wound dressed.

A slight disturbance of the right breast occurred on the 2d of September, on account of the formation of milk—being the sixth day after the operation—at which time the temperature rose to above 100°. The chart will show subsequent oscillations of temperature, variations of pulse and respiration. Patient left hospital November 3,—walked to carriage.

Since writing the foregoing I have received from Dr. J. F. Binnie a report of a case of extra-uterine pregnancy as follows:

"Primipara, æt. twenty-six. In December, 190', patient complained of severe abdominal pain: physician thought her pregnant; two months ago pain in abdomen—Dr. Smith suspected extra-uterine pregnancy; pain increased and continued to date with fever during the past two days: Drs. Smith and Mann diagnosed extra-uterine pregnancy and advised operation, but this was delayed.

"June 25, 1906, patient brought to St. Joseph's Hospital, seen by Dr. W. F. Frick and myself. Temperature 102°, pulse 120, very weak; much abdominal disturbance; tympany in front,—dullness in flanks. Examination impossible because of agonizing pain and tenderness. Diagnosis, peritonitis; probably extra-uterine pregnancy present.

"Operation.—Left rectus incision; clear brownish fluid in belly; no black fluid; no clots. An umbilical cord presented, size man's thumb, running from a tumor in the right broad ligament to the left kidney pouch. A full-term child lay free

(no membranes) in left kidney pouch. Clamped and divided

saline enema of one pint and was put to bed in good condition.

(no membranes) in left kidney pouch. Clamped and divided cord. Removed child alive, cords slightly adherent to omentum. Tumor in right broad ligament, size child's head or larger, has thick friable walls, bleeds easily on manipulation. Removed tumor which consisted of placenta lying in a cavity formed from the tube and the broad ligament. There was not much loss of blood; the small intestines were distended to size of colon and were red. There is history of recent scanty and albuminous urine. Patient died within twenty-four hours. Duration of operation forty minutes. Child was living when last heard from about four weeks ago."

Dr. Binnie adds a second case as follows:

"Mrs. S., æt. thirty-two, American, white, housewife, mother of one child, three miscarriages: patient referred by Dr. H. O. Leonard of this city. Entered hospital March 28, 1906, giving history as follows:

"In July, 1905, missed menstruation; in September 15, 1905, was taken with severe pain in left side of abdomen with all symptoms of shock, began to flow some days later, passing a suspicious membranous substance; was confined to bed for some time,—partially recovered and moved out of the city. Menstruation regular until January, 1906, when she again missed her monthlies. About middle of March was taken with severe pain in right side of abdomen and suffered all symptoms of shock. Two weeks later she had a recurrence of pain with symptoms of internal hemorrhage; on the 27th of March she was removed to Kansas City, and passed under my observation, at which time I found her very anemic, pulse 140, temperature sub-normal; examination revealed uterus enlarged with extra-uterine pregnancy: tenderness over right iliac region with tumor plainly outlined. March 31, 1906, after a previous preparation, patient was anesthetized and operated upon by Dr. Binnie. Abdomen opened, revealing an impregnated uterus of about three months' growth; a fresh tubal pregnancy on right side disclosing a ruptured tube—fetus intact—left tube developed the seat of an old hematoma. Both tubes and the uterus were removed—patient made a complete recovery.

Dr. J. D. Griffith of this city, had a case several years ago—removed a very large fetus from a woman at St. Joseph's Hospital, which she had carried more than twenty-seven months. (See Transactions Missouri Medical Association, 1893, p. 299.)*

These are the only cases of full term extra-uterine gestation which have come to my knowledge as occurring in Kansas City in the last twenty-five years.

* Dr. Griffith operated again on this woman on the other side for extra-uterine pregnancy at the third month.

TIME AN IMPORTANT FACTOR IN LABOR—ESPECIALLY IN PRIMIPARÆ.*

BY LEMUEL C. GROSVENOR, M. D.

After a very rich and varied obstetrical experience of more than forty years—often in consultation with many confrères—I am strongly of the opinion that much of the peril and many of the disasters of the lying-in chamber are caused by undue haste.

We do not love Nature enough. We do not study her methods and trust her teachings as we ought. She is our strongest ally in parturition.

This fault of haste is not wholly on the part of the accoucheur by any means. The husband—the mother—the friends—and, I regret to say it, sometimes the trained nurse, are urging the doctor to “do something” to hasten the delivery and terminate the suffering.

It is not an easy matter under all this pressure to keep hands off and wait. We are all human beings and this is an uncanny odds—“six against one,” and that majority all interested friends or close relations.

At this juncture nothing so helps to gain time and calm the troubled waters as a gentle and partial chloroform anesthesia. It immediately relieves the agony, renders the pains bearable, and greatly relieves the husband and friends of their painful anxiety. It is eminently benign and helpful, and after using it constantly for more than thirty years, I can say it is entirely harmless.

The lying-in chamber is eminently the safe place for chloroform. The parturient effort tones up the heart's action and so eliminates the greatest of all dangers. I have never seen the slightest harm to mother or child in my own practice.

The anesthesia should be gentle and partial—never profound as in a major surgical operation. Two ounces often takes me through two or three cases of labor. Twice, in consultation with other physicians, one a professor of surgery, where excessive quantities were used I have seen serious.

* Read before Obstetrical Society A. I. H., Atlantic City, N. J., September 11, 1906.

trouble. An even, gentle, and watchful service in this matter is essential.

The patient labors just as well—perhaps, moans and writhes a little at the height of the pain, but is unconscious of suffering. This makes the service much easier and pleasanter to the accoucheur.

We are all human beings and cannot hear or see human suffering and be indifferent to it.

The nervous wear of those primiparæ is an important factor to the good physician. Let us so care for ourselves in this matter that we may always be in condition for the best service.

The complete mastery of ourselves helps to control the elements about us, and this is no small factor in our success.

"Doctor, how came you to commence the use of chloroform in labor when no one had ever used it there?" Well, I'll tell you.

The surgeons were using it with the happiest results to save suffering and secure that perfect rest so essential to delicate operations. So I said to myself, "Obstetrics is the highest art of surgery. There is no reason why this boon of the surgical amphitheater should not also bless the lying-in chamber."

But we had no precedents. No one, so far as I could learn, had ever used it there (1870). In talking with my confrères it was objected that it would retard labor—it would cause post-partum hemorrhages—it would imperil the lives of both mother and child. All this put me doubly on my guard. I talked with my good friends and noted surgeons Dr. Willis Danforth and Dr. G. D. Bube, both of whom approved my thought but counseled caution. So far from retarding labor, it expedites it, for it first paralyzes the cerebro-spinal system and leaves the sympathetic system, which is the great power in labor, in full force. You *will* the heart to stop beating and it does not stop "worth a cent," and so the suffering patient says, "I *will* not have any more pain," but the rhythmical impulse and suffering recur just as before. Both are under control of the great sympathetic system, which dominates the great forces of nature.

Again, the anesthesia greatly relaxes opposing muscles so that we soon find the rigid os and later the firm perineum becoming soft and pliable and much more dilatable. So now the second stage of labor becomes more benign.

Then the pain is so far relieved that there is no dread of the

next pain and the patient joins hands with it and makes it more efficient. Thus we see that the plea that the anesthesia retards labor has little to support it. It is true the patient does not scream as before, but the taxis reveals the fact that the true parturient effort is as forceful and rhythmical as ever.

That wonderfully strange hollow muscle, the uterus, is as powerful as before and even more effective—through the relaxing of opposing muscles. Another great boon is, that on account of this relaxation and freedom from haste, lacerations of the cervix and the perineum are much less likely to occur.

Post-partum hemorrhages instead of resulting from anesthesia are much less frequent here. Why? First, the chloroform so conserves the forces of nature that at the end there is less prostration and so less liability to hemorrhage and the relaxed condition of the parts saves nearly all those cases which result from traumatism.

Does it imperil life?—So far from it, it saves as large a proportion of precious lives in the lying-in chamber as in the surgical amphitheater.

The chloroform should never be given in labor to the point of complete or profound anesthesia as for a major surgical operation. This gentle or partial anesthesia may be continued for many hours without harm. Recovery from this gentle chloroforming is immediate and complete, and is never followed by nausea and vomiting.

But a little time ago a patient said to me, "Oh, Doctor, you don't know what a blessing that chloroform was. You know I knew all that was going on, but did not feel the pains." "Well," said I, "I'll take your testimony a little later in this matter." Then I took my tongs from the floor and handed them to the nurse to cleanse and sterilize. "You did not use those, did you?" "No, not so far as you know." But I had had them applied for more than half an hour. She certainly would have known that if she had known anything.

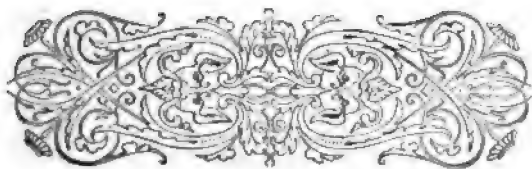
Still farther. Chloroform takes away the dread of the next labor. How many families there are with but a single child. They have been through the ordeal once but take good care that it shall not be repeated.

Frequently a little merry bantering will give the case a less serious aspect. Say, "O. K., my dear patient, a pain lasts but thirty seconds." "I can bear a pain for that little time, if it is

hard, especially as I have such a complete rest afterwards." "Remember, you are not only giving birth to this child, but you are building the roads for the other eleven, for subsequent dilata-tions are less painful and less prolonged." "But there isn't to be any more." To this I have but to reply, that I have been many years in practice and have seen large families raised just that way.

As a business proposition as well as from humane motives, we should care for our ladies that they will never dread mother-hood again. That in two years the call will be repeated. It's a poor doctor who does not look after the business side of his profession. In my own house the good wife exclaimed, on hearing the first cry of her firstborn, as she awoke from her partial sleep, "Is that my baby? Is that my baby?" "Yes." "Is that all there is to it?" "Yes." "I'll have a dozen babies!" and she has never dreaded labor since.

My special plea is for more time in labor, especially in the primiparæ, and if this paper contains any helpful hints in this direction, its purpose will have been realized.



PRURITUS VULVÆ.*

BY C. D. COLLINS, M. D.

Pruritus vulvæ being both obscure in its nature and difficult to treat, offers the best explanation as to why this topic is presented. Pruritus may be defined as an itching without pathology, as a neurotic state of paresthesia, as a sensory neurosis resulting in hyperesthesia and itching. The disease is peculiarly negative in objective symptoms. The earliest symptom of the disease is an intolerable itching before the appearance of local pathology. Itching in great severity constitutes the leading symptom from beginning to the end of the disease. The itching is frequently described as being intolerable, tingling, biting, stinging, and usually aggravated by the warmth of the bed. Periodic attacks is the usual expectancy; the periods of remission being from a few hours to a few days.

After the advent of the disease, various degrees of local inflammation and complex skin lesions rapidly form at the seat of the trouble. These lesions may be no more than abraded surfaces due to the scratching, a mild or severe dermatitis, a severe type of dermatitis approaching a true eczema, or an impetigo infection may individually or collectively appear. Usually a multiplied form of secondary lesions such as excoriations, scratch marks, blood crusts, scales, and more or less oozing of serum will be found in a well-established case. In cases of long duration more or less pigment deposit and staining of the skin take place. These symptoms with their various modifications endure from a few weeks to months and even years.

The cause of the disease is even more varied than its symptoms, and the success of the treatment will depend largely on the ability of the physician to locate the cause. Pruritus vulvæ is one of the common complications of the pregnant state, and as such, is one of the most annoying. The limited statistics which the writer has been able to collect, go to show that its advent is most often at or about the fifth month of gestation, and occurs in those where elimination is defective. As is well known, many women during the pregnant state, either from fear or ignorance, are careless about taking the proper amount of exercise, and this together with circulatory disturbances,

* Read before American Institute, September, 1906.

quickly dam up the excretory functions with its usual chain of evil consequences. Defective kidney action is even more serious than defective bowel action, and equally important with these is the detection of saccharine urine. Neurotic patients are predisposed to these troubles and represent the majority of patients who suffer from this disease. Excessive or improper diet, especially of the starches and proteids, is a factor to be remembered and reckoned with in all cases of pruritus.

Among some of the local contributing causes are the overlapping of skin surfaces, heat and moisture, and friction of the clothing. Various irritating vaginal secretions, especially those of a purulent nature, or a pre-existing blenorrhagia will often be the prime cause. The possibility of various parasites must not be overlooked but searched for even in the cleanly, as accidental infections will occur. There are cases, however, in which no assignable cause can be found no matter how diligent the search, and this constitutes the most difficult class to handle.

The frequency of this affection is much greater than is generally known, as many prefer to suffer in silence rather than to consult the physician, as extreme modesty often forbids.

Pruritus in itself would not be so deplorable if it were not for its tendency to become a pustular dermatitis, eczema, or an impetigo. And, indeed, in many cases the secondary complications become so marked as to practically obscure the original cause.

The treatment necessarily points back to a study of the cause. Advice along general lines is imperative. Regulation of the diet is usually important. Eating too much is especially harmful as it overtaxes the digestive forces, and the organs of elimination cease to be equal to their task. Let the breakfast be chiefly cereals and fruit. The heavy meal of the day should occur at noon, at which time soup, fish, or a light meat diet may be indulged in. The evening meal should be light but nutritious, consisting of milk, buttermilk, cornmeal mush, some fruit, avoiding stimulants, meats, eggs, or any food which cannot be digested in two or three hours. With a diet like this for the evening meal the emunctory functions are not overtaxed during the night, the sleep is more restful and refreshing, and nature's forces are equal to their task the next day.

The excessive use of soap and water is contraindicated. Bear in mind that the tissues of the pudenda are peculiarly

constructed, easily irritated, and possess a natural secretion which under normal conditions preserves the parts in perfect health, but when robbed of this secretion by excessive scrubbing with soap and water, it results in irritation and often harmful consequences. From a dermatological standpoint, one or two soap and water baths a week are sufficient.

Circulatory disturbances can only be regulated by a rest in the reclining position of one or two hours each day and the supporting influence of the abdominal band. Irritating vaginal or cervical secretions may be met by antiseptic douches of potassium-permanganate, 1-3000, bichloride of mercury, 1-10,000, or a normal salt-water douche. Rarely ever is speculum treatment required, but instead an antiseptic vaginal suppository is to be recommended.

I wish to find fault with the prevailing custom of the free use of salves upon these parts. They rarely ever indicate and seldom give more than temporary relief. If palliation becomes a necessity, it is better met by the various antiseptics and mildly astringent lotions, such as lead acetate from five to ten per cent. Or better still, Bilroth's Solution, which is composed of lead and alum. Ordinary starch water, carbolic solutions from two to five per cent., normal salt water or lime water are among some of the most satisfactory and yet harmless palliatives. In neurotic patients much benefit will be derived by using the high-frequency electrical current to the spine, and less often over the affected area. The static breeze or induction spark for the general nervous system and for equalizing the circulation are often productive of most excellent results. Should a chronic dermatitis or an eczematous condition occur, then the use of X-ray over the affected parts is indicated.

Aconite is the remedy where the itching is of a tingling sensation with fine prickings and the skin is hot and dry and the patient is restless and anxious.

Agaricus.—Itching and painful sensations. Stinging like pricks of needles. Chilblain itching with swelling of the parts; redness and dermatitis. Itching more or less over the entire body.

Belladonna.—Bright red and shining skin. The itching is relieved by scratching, which produces a pleasant sensation.

Voluptuous itching especially adapted to nervous patients with much backache and a vindictive temperament.

Croton tiglium.—Fine vesicular rash with burning after scratching. Tendency to vesicles and pustules. Great itching but the skin is too sensitive to scratch. Moist dermatitis.

Dolichos.—Pruritus with torpid liver and poor elimination. Jaundice and swelling of the parts. Itching without eruption.

Digitalis.—Bluish red and edematous skin with feeble circulation. Chronic pustular dermatitis with seborrhea. Circulatory disturbances.

Graphites.—Pruritus with moist and oozing dermatitis. Weeping of the parts after scratching. Bleeding fissures and scratch marks. Worse at night in warmth of bed.

Mercurius vivus.—Defective elimination. Torpidity of liver and kidneys. Moist dermatitis with great itching. The parts are bathed in blood and serum with a tendency to a pustular degeneration.

Nux vomica.—Pruritus during pregnancy with jaundice and morning sickness with burning and itching all over. Urticaria-like lesions with great itching, worse at night. Great debility of the general forces and over-sensitive condition of the skin.

Rhus tox.—Inflammatory dermatitis resembling erysipelas. Itching all over but worse on the hairy parts. Eruptions like herpes with incessant itching and burning. Raw, excoriated surfaces or thick crusts which are offensive. Those of a rheumatic tendency with defective elimination.

Sulphur.—Itching, worse at night with burning heat in the skin. The parts become rough, scaly, and crusting. Erysipelatous with a tendency to small pustules and boils. Itching of a voluptuous, tingling character. Worse at night by the warmth of the bed.

Tarantula.—An itching pain as though produced by the crawling of an insect. Pruritus vulvæ with oversensitiveness of the sexual organs. The skin is gangrenous with a tendency to the formation of boils, carbuncles, and abscesses. The skin is unhealthy, indicative of a low state of vitality. Especially useful in pruritus vulvæ in nervous, hysterical, and weakly individuals.

PRESIDENTIAL ADDRESS BEFORE THE OBSTETRICAL SOCIETY.*

BY B. H. OGDEN, A. M., M. D.

I thank you for the honor and privilege of presiding over this Society and of representing you during the year past. Six years ago the initial steps for the forming of this Society were taken, and this is the fourth annual programme. The subjects considered are of vital interest to the human race and though during the last few years other departments of medicine have had a more brilliant setting, none have a more direct bearing upon one of the great social problems of the day summed up by the general term "race suicide." I therefore plead for a larger active membership. Every member of the Institute who engages in general practice, who is called upon to enter the birth chamber to assume the responsibility of life and health for two human beings, should be a member of this Society, not only for what he may receive, but for what he may give toward the sum of human happiness.

I have endeavored during the year to secure a programme which would be both profitable and entertaining. The change in the time of meeting and the natural subservience to the International meeting have made this a more difficult task than usual.

Obstetrics should properly include with it the subject of gynecology. The obstetrician should be a thorough gynecologist and the gynecologist should be an obstetrician, so closely are the two subjects related to each other. Both may be said to furnish work for the other. I am sure you can recall cases in which there never would have been a chance for the obstetrician had not a skillful gynecologist preceded him, and too often there would have been no work for the gynecologist had not an unskillful obstetrician preceded him. However, for us the fates have decreed that this Society shall be a body of obstetricians only and we shall therefore make it our highest endeavor to so conduct ourselves as to leave but very poor picking for our handmaiden.

With the Grecian civilization, the highest ideal of woman

* Delivered at Atlantic City, N. J., September, 1906.

was realized in motherhood. Among the Teutons this thought is woven into their language. The uterus, which distinguishes woman from man, is called "mütter." I believe to-day in spite of much said and written to the contrary, most women rejoice in the possibility of being called mother, and are willing to pay the price, which has too often been a life of semi-invalidism. In my experience those who have avoided maternity have done so more because of the fear of child-birth, its pain and uncertainty and subsequent ill health, very probably exaggerated, but too often exemplified in the life of some friend. It is the purpose of a Society like this and of the science of obstetrics to enable the physician to say to the prospective mother, "every possible safeguard shall be placed around you from the time of conception on through the period of gestation and parturition and the puerperium, not only to make your life free from danger, but to secure from you an ultimate health and vigor often beyond that of your former experience." To bring this about there must be a thorough understanding and co-operation between the patient and her physician. The public in particular needs continuous education in the matter of putting the prospective mother under the charge of a competent physician from the time she first knows of her conception until the period of involution is past. The only death due to child-birth, it has been my misfortune to have, could have been prevented had such a rule been obeyed. You are the leaders of thought, the educators in this line; with you rests the responsibility of framing public thought, of teaching mothers how to bring up their daughters; of supervising the educational systems, of emphasizing physical excellence, as well as the intellectual in this day of woman's advancement. The foundations of ultimate health after maternity are often destroyed during girlhood or young womanhood rather than by imperfect treatment during the child-bearing period.

In preparing this programme I have endeavored to cover the more important features of supervision of pregnancy which relate to the *prevention* of trouble and therefore make for ultimate health, but have been disappointed in some papers. Fortunately nature intended woman to bear children and provides for this so well that comparatively few cases go wrong, but the science of obstetrics is developed not for cases which have no need of help, but for the occasional case in which dame

Nature seems to be blind. To *anticipate* and *prevent trouble* is the physician's function and not to interfere with normal conditions; the one is perhaps no more difficult than the other. What are some of the early points of consideration he should give to his patient? In the first place endeavor to give her a normal and healthful outlook upon her condition, not one of fear and fads as regards diet or exercise; explain the process of food construction and those of elimination; in short the hygiene of pregnancy. Induce her to turn a deaf ear to the nonsensical prattle with which so-called friends will regale her; let her come to you for advice even in regard to trivial things if they annoy her.

Early in the case I am a thorough believer in the benefits of a practical pelvimetry. Every woman who gives a history of a previous difficult labor and every primipara should have a careful pelvimetry made during the early months of her pregnancy. Because of imperfect methods and attempts to differentiate too closely, some ridicule has been given more recently to pelvimetry, but when considered from a practical standpoint I am sure the knowledge gained is of very material assistance to the physician. He is thereby enabled to hold the master hand; is not compelled to wait until the exigencies of the case force upon him a difficult midnight operation, but may choose his own time and place. In the interest of mother or child he may bring on premature labor, or induce an abortion. This knowledge, combined with better surgical skill, has almost resulted in the abandonment of craniotomy and embryotomy, which are not only difficult and dangerous, but revolting to our finer sensibilities. The ultimate health of the mother and the saving of the child's life demands a practical pelvimetry.

At the present time there is no more fruitful field for investigation than is to be found in the study of the toxemias of pregnancy. We have much to learn in this line, but the spirit of investigation is rife and I may safely say more attention has been given to this subject during the year past than to any other phase of obstetrics. As yet the treatment of the toxemia of pregnancy is one of the most unsatisfactory features of obstetrical practice and since the conquering of the old-time child-bed fever toxemia claims the greatest number of victims. This is largely because we have not known the exact pathology and cause of the condition. Ewing, who has spent much time

on this subject, says: "The exact nature of the disturbance of nitrogenous metabolism, which is responsible for the clinical manifestation of the toxemia of pregnancy, is a failure of the oxidizing capacity on the part of the liver. This failure results in diminished urea and amido-acids, ammonia, and other rich proteid derivatives remain in the blood as a poison, which is manifested clinically by persistent vomiting, hyperemesis or symptoms resembling somewhat those of uremia, or convulsion and eclampsia. Besides the failure of the liver, the spleen, thyroid, and suprarenal glands lose their power to defend the organism against the poison. Beyond this, however, is the burning question, why does the liver fail in its oxidization? What is it that prevents the organism from defending itself; what individual weakness is responsible for this state. I know of no more interesting or intricate study than this presents, but it is not within the province of this paper to take it up as one of the papers presented will do so. I believe the toxin will be found to be developed in the genital tract and that those who are engaged in the study of cytotoxins and syncytiolism are working in the right line and will eventually discover an antitoxin which, like that for diphtheria, will be a great boon to humanity. We cannot get away from the fact that while much may be done to prevent toxemia by improving elimination *emptying the uterus* is the only *radical cure*. I think this fact points unmistakably to the uterine contents as the origin. The ultimate health of many women depends upon a still further investigation and elucidation of this subject, to which we may all contribute by making a special study and report of all cases presenting evidence of toxemia; a more thorough and exhaustive examination of the urine and blood of such cases is needed. As yet we cannot say eclampsia is *positively* a preventable disease; the etiology is too poorly understood to make such prophylaxis *invariably* successful; still very much has been accomplished in this line and many lives are saved through the watchfulness of a competent physician. It is difficult of demonstration, yet I believe she who places herself under the care of a thoroughly up-to-date homeopathic physician who prescribes intelligently for her various symptoms as they arrive has the best chances of escaping serious trouble.

The ultimate health of the mother depends very much upon a perfect technique and absolute asepsis. Death from sepsis is

far less common now; we know how to prevent and to treat it better. The severer forms are not as often seen, but a mild sepsis frequently results in a chronically inflamed tube, enlarged uterus, disturbed uterine support, and subinvolution with all its chain of symptoms. I have not time to dwell upon this and enlarge the subject; we all know it. Are we sufficiently careful? Do we appreciate that loss of health is often more to be feared than even death? The habit of an aseptic technique is a necessity for a good obstetrician.

Too often ultimate health is sacrificed for some present gain. I do not believe in permitting a woman to suffer hour after hour in the blind hope that nature's forces may deliver her; nearly always in slow labors I give sufficient chloroform to enable me to make a thorough examination with the whole hand in the vagina if necessary. If I find nothing wrong, only perhaps a rather large child, or the rigidity of a primipara, I am content to give nature a longer chance, believing that the ultimate interests of mother and child are best served thereby; always bearing in mind, however, the limitations of human endurance and the danger of serious nerve strain from too prolonged suffering.

It should go without saying that all injuries during child-birth should be repaired, that the normal function should not be disturbed; that this is not done all who do gynecological work will testify. There is really no excuse now for an improperly repaired perineum; even lacerated cervixes are more and more receiving immediate attention, but if such should not seem advisable the patient should at least know of the condition and probably have a secondary operation a few months later, especially if it is evident that the *process of involution* is *interfered* with. This should be the criterion; restoration of function, not idealism. Operations are fascinating; it is extremely important that they be well done, yet who does not realize that often the ultimate results depend very much upon the after-care and treatment? This is even more emphatic in obstetrical work. When the child is born and the mother at rest in her bed, what a sense of relief and satisfaction comes to the expectant family, also to the physician, if he is conscious of having done his work well, but he knows that the case is not yet finished; that really the future health of his patient depends very much upon the month following. I think more attention

and investigation as to the best method of treatment during this period are needed. How much rest in bed, position, exercise, and numerous other small questions, yet vital as the drops of water to make the ocean. The causes of arrested involution, how we may assist the process are less fascinating questions but of lasting importance as regards the young mother's ultimate health and usefulness to her family. This supervision should extend over the whole period of forty or fifty days required for involution to take place; particularly after the mother begins to assume the care of her child and household responsibilities is this supervision necessary. Many a time have I been able to prevent serious trouble by a friendly call made a week or so after I had ceased making my regular visits, almost the only cases which have brought discredit to me have been those in which some difficulty developed after my early attentions had ceased. The public needs to be taught to expect such supervision and to pay for the same.

All statistics prove that maternity hospitals give better results than can be obtained at home. This being the direct results of routine methods of treatment which can be only imperfectly carried out at the home, also of better and quieter surroundings. In the East the maternity hospital is far more common than in the West, but this again is a matter of education, and all over the land it is the duty of physicians to encourage the hospital idea and thus create a demand for them among the people; given a demand, the supply would be immediately forthcoming.

A great surgeon recently said, "Too little attention is given to the patient as an individual." It will always redound to the glory of homeopathy that in its teaching the entity of disease is minimized or lost in the prominence of the individual; this is the keynote of progress. The public cares little as to methods but demands results. It matters but little to them of what school you are a member; often no inquiries are made. Whether you hold to this or that theory, give large or small doses or no medicine at all does not concern them, but it does matter that in the safest, quickest, and pleasantest way their ills are conquered and health restored. They do not wish to have the knife used where medicine is competent; they do not wish to waste time or money on medicinal treatment if only surgery is competent to cure; success, results are demanded. This, after all, is the criterion of every endeavor. By their fruits ye shall know them, and so I say, let us keep before this society as our highest ideal the ultimate health of our patients; not brilliancy of method, not commitment to any theory, not routine, not any of the very helpful suggestions and advice which our papers and discussions may bring forth, *excepting* as they are *found to contribute to the ultimate health and well-being of the individual*; then shall motherhood become indeed the flower of womanhood.

TREATMENT OF CHRONIC NEURASTHENIA.

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BY GEORGE BURFORD, M. D.

From a study of the subject, I have learned to unlearn several heresies that are taught directly or by implication concerning neurasthenia.

1. I have learned to unlearn that neurasthenia, when of a chronic character, can be cured in any extraordinary manner in a few weeks, or even months. That the most insistent or the latest manifestation can be thus submerged I have no doubt. But this is not the disease in itself; some slight stress of illness or fatigue, and lo! the former symptoms, or various quite new ones, are on us with as much insistence as ever.

2. I have learned to unlearn that—in chronic cases—the patient is safe in any period less than a year and a half to three years after the commencement and pursuance of systematic constitutional treatment. I have adopted as a working hypothesis, that what has to be brought about as cure is no less than the entire replacement of the molecularly disarranged protoplasm by new nervous structure; that the ganglia involved require regeneration; and this has a striking parallel in the phenomena of the menopause, which in marked cases require the same length of time for their subsidence.

3. I have learned to unlearn the error, that massage, or high pressure feeding, or the D'Arsonval current, can cure in any other way than by providing the ganglia involved with stimulus and pabulum to regenerate. The tissues may be laden with fatty material, the product of massage; the walking powers of the patient may be as good as ever; but the cerebral symptoms, if such be present, may continue quite uninfluenced in the betterment, until the nervous centers themselves have had time and opportunity to be regenerated.

4. I have learned to unlearn the dangerous errors that a Weir-Mitchell course is a final or complete measure, that it needs no safeguarding to prevent its issues being frittered away, or that no supplement or complement is necessary with its use. No case of Weir-Mitchell is complete without Swedish exercises as a part; a Weir-Mitchell course requires maintaining and amplifying by Swedish exercises for a good year, year and a

half, or two years after its prescription. Why so many suitable Weir-Mitchell courses are unproductive is that it is not recognized that all these can do is to lay the foundation of improved health; the superstructure requires to be built during one or two years by remedies, by Swedish exercises, by mountain altitudes, and above all by a continued milk surplus dietary.

5. I have never learned, and therefore I have not unlearned, the gratuitous error of explaining neurasthenia by some fanciful analogy to storage of nerve force, and the running down of batteries, etc., etc. Such analogies are not based on experimental evidence, do not correspond to the facts of the case, and are merely specimens of slack thinking.

6. I have learned to unlearn that it is expectable to finally cure—I do not mean symptom remediation—but wholly cure marked cases of neurasthenia by therapeutic measures unless on a Weir-Mitchell basis. After this, remedies are of much more avail, and probably a material obstacle to cure is removed. I have seen cases of Weir-Mitchell fail in part because therapeutics were thereafter neglected, and I have seen cases well and carefully prescribed fail in that a basis of Weir-Mitchell treatment had not been prescribed.

7. I have learned to unlearn that surgical operations are in themselves actual curative measures for neurasthenic states. Whether it be stitching of the kidney, or some pelvic operation, or gastrorrhaphy, these act by removing an embargo to cure. The actual active suitable measures for cure find fit time and place after operation has removed a *per contra*. To surgically operate on a neurasthenic patient and imagine that thenceforth the general condition will self rectify is a fatal error. Chronic neurasthenia does not self rectify.

8. Lastly, I have learned to unlearn that in chronic cases any real progress can be made by merely blotting out with remedies prominent symptoms as they present themselves; of these there will be plenty. No condition is so prolific of varying symptoms as neurasthenia; but to merely dance therapeutic attendance on whatever group of symptoms is uppermost for the time, without, at the same time, taking sweeping measures for the betterment of the underlying state, this, I say, is simply to mark time and not to make progress. It is patchwork, not cure.

Therapeutic and Extra-Therapeutic Measures in Neurasthenia.

My experience in these cases is distinctly to the effect that the more chronic and confirmed the case, the more considerable is the part properly played by extra-therapeutic measures. Thus I have come definitely to the conclusion that the specific action of remedies is very greatly heightened by a prior course of Weir-Mitchell treatment, entire or modified. Nay, I have seen many cases where no progress with remedies seemed to be made, until a basis had been laid by massage and surplus feeding. Taking into account the length of time it requires to cure pronounced chronic neurasthenia, i. e., from one to two years or more, it will be divined that much time is saved, and better results gained, by giving the organism an initial and generalized betterment by way of Weir-Mitchell. I have seen the action of well-chosen remedies apparently blocked and attenuated until a thorough Weir-Mitchell course had been intercalated, and Swedish exercises thereafter carried out.

To avoid any misinterpretation, I may say that I do not believe Weir-Mitchell treatment cures marked cases of neurasthenia. I am of opinion that what it does is to give the organism a good start in the direction of recovery, but this good start, in fact, has to be amplified for many months after the Weir-Mitchell course is over.

I am of opinion that therapeutics actually cures chronic cases of neurasthenia, and that without these many a case merely treated by extra-therapeutic measures sooner or later relapses. The more marked the condition, the more necessary is it to begin with a Weir-Mitchell basis and continue with a therapeutic superstructure for a considerable time.

The Homeopathic Therapeutics of Neurasthenia.

The place of homeopathic therapeutics in neurasthenic treatment has already been indicated. Many cases of subacute form and recent origin may be cured by therapeutic measures alone, given the removal of causative agencies.

But in all cases I maintain that the cure is either incomplete, or recurrence of the illness sooner or later is to be looked for, until a diathetic and symptomatic course of therapeutics is diligently instituted. My experience clearly indicates that cure without therapeutics is on a very insecure foundation, and that

the treatment of diathetic taints is just as important as the remediation of insistent symptoms.

There is no necessity to give in detail the indications for particular remedies. The materia medica provides these. The gonorrheal and tubercular taints need in particular to be included in the area of prescribing. Nosodes such as tuberculin, and animal extracts such as adrenalin, are of especial value, and the higher dilutions of nearly all the remedies used are much more fertile in result than, for the most part, the lower potencies. This note of caution especially applies to neural remedies like picric acid. I have had several unpleasant experiences from giving this remedy, in low potencies, for neurasthenic symptoms. The sixth I have known more than once to add to and not lessen the patient's sufferings.

Animal Extracts and Nosodes.

Were I asked as to the treatment of the future in chronic neurasthenia, my opinion would emphatically be given in favor of nosodes and animal extracts. I believe that for these, both in physiological dose and in attenuation, a fertile and brilliant future lies. I realize that the accessory treatment of neurasthenia, whether by high tension current, or by phototherapy, or by rest and ample feeding, or by high altitude residence, works in a circuitous and indirect way, in that, by heightening the tone and stimulating the energies of the whole body, the foci of the abnormal condition are caught up in the general betterment. I also recognize that the effective remedy, be it polychrest, or nosode, or animal extract, acts ultimately by restoring the balance of the affected nervous molecule, and thus conferring a higher grade of immunity in the neurasthenic to depressant influences.

For similarity in nature, as well as for directness in operation, no drug-therapy can compare with remedial measures of the same character as those that probably cause and maintain the disease. I mean products of animal origin.

I much regret that this most promising line of treatment in neurasthenia—one of the new methods in homeopathy—still requires to be worked out.

Dietary.

If, then, the treatment of neurasthenia is to permanently heighten the standard of metabolism of the individual patient,

the proper selection of raw material in the shape of foodstuffs is of prime importance, for these contain the matter and energy out of which a higher grade of molecular structure in the nervous centers is to be evolved.

Two errors in dealing with this subject frequently appear. The first is that the nervous system in and by itself can have its nutrition heightened by special foods, without the simultaneous generalized inclusion of other body tissues in the improved metabolism. For this view, a kind of short-circuiting in dietary, there is, I regret to say, no clear evidence. The only way to secure specific nervous improvement by diet is to insure general bodily improvement; and the diet must therefore be a representative one.

The second error is that the putting on of fat, in and for itself, is a desirable end; and that the progress of the patient is measured by his increase in weight. This is a radical error. The intake of fat, deposited again at various depots in the body, corresponds to a certain surplusage of fat in the dietary. As a surplusage it is redeposited at certain depots in the body, and here, unless utilized again for metabolism, is as useless in the connective tissues of the patient, as though it still lay in the connective tissues of the providing animal.

Now, our object is to heighten the stability of the nerve centers at fault—to regenerate their molecular organization to a normal plane, while daily they continue in function, and the requirement is to supply the whole organism with a representative food. Next, as the digestive power is almost always at fault, this representative food must tax the digestive powers of the patient the very least. Finally, after digestion, the food must lend itself as readily as possible to the repair of waste. That representative food is milk.

This organized food is clinically the most perfectly adapted to the rectification of the neurasthenic organism in point of foodstuffs. I would even go so far as to say that without this animal food as a source of tissue and energy, the majority of chronic neurasthenic cases would be incurable. A patient may continue well supplied with ordinary foodstuffs for a long time, and make no progress, but when milk in sufficient quantity is superadded to the dietary, and active or passive muscular exercise simultaneously taken, the vitality rises, the

capacity for sustained excretion increases, the nervous vigor is more readily recuperated.

How to give milk is of equal importance as the necessity of giving it. It is usually prescribed in jorums of a tumbler at a time at intervals during the day, and the patient soon complains that she cannot take it, or is "sick of milk." No wonder. I learned the proper method from Sir Patrick Manson when I was under his care in Hong Kong. Take milk, as you would soup, through the medium of a spoon, so that each spoonful is well insalivated before it is swallowed, Sir Patrick suggested; and I took mine with a teaspoon; but in these colder climates a dessertspoon may be substituted. This is by far the most effective way of taking milk, and when patients are laid up, it is the only right way. For ambulatory patients I adopt a slight modification. I direct that a wineglassful be slowly sipped every hour during the day, as the clock strikes. In this way the small quantity taken does not try the digestion, nor is it in sufficient bulk to spoil the appetite for meals, yet at the close of the day about two pints will have been presented to the system in a very assimilable form.

Milk charged with CO₂, or diluted with rice or barley water, or with soda water, or plain hot water, are sundry of the substitutes for pure milk. But I am firmly of opinion that milk for neurasthenics is as important as milk for infants. Of the curative dietetic value of milk in neurasthenia I had some years ago a vivid illustration. Late in the nineties I saw in consultation one of the worst ambulatory cases of neurasthenia I have ever seen. The patient was a lady, emaciated, distressed, miserable. Her husband accompanied her, and his story gave point to the lady's statement. He was a financier in the city, "and often," said he, "I receive telegrams of an alarming character: 'come home at once,' 'Am dying, return immediately,' and similar urgent messages. You may guess," said he, "what peace of mind these give for financial work." The lady was brought to me for uterine symptoms; these I quickly tailed on to the neurasthenic bodily symptoms, but the *tout ensemble* was so marked and so forbidding that I held out to myself scarcely any prospect of the patient's recovery. She had had medicines before; I believe I suggested others; but I laid the greatest stress on the addition of milk to the dietary

in the way I have mentioned. I saw no more of the patient then, and privately marked her off as one of the incurables.

But eight years after she returned, fat and well. Inquiring if I remembered her, "Indeed, I do," said I. "What have you done?" "I followed out your directions strictly. I took a wineglass of milk every hour daily, for three years. It was then no longer necessary to continue it; I was well, and I have been since in better health than I ever remember before in my life."

Swedish Exercises.

Half the battle of treatment is in the proper presentment of foodstuffs. The other half is in the heightening of the metabolic activity of the body so as to properly assimilate these foodstuffs. These two remedial measures are inseparably linked.

If we take an average patient with chronic neurasthenia, we usually find the general musculature of the body debilitated, and usually the defect in the musculature is most seen in the abdominal parietes. The abdominal walls are toneless and flabby, and without resistance; the intestinal musculature is in the same condition, and allows descent and bulging of the whole intestinal mass; the right kidney can be felt in a state of ptosis, and the upper limit of gastric resonance is often much increased. If such patients are asked to take a deep breath, the lower ribs scarcely expand at all; the thorax ascends bodily, there is no diaphragmatic descent. Examination shows just such a condition as is found in the abdomen generally, to be repeated in the pelvis; the musculature of the pelvic floor is weak, flaccid, and descends; the uterus usually follows suit, the organ is prolapsed or bent, and with this comes that drag in the back with which prescribing practitioners are so familiar. Now what is the physiological cause of this array of symptoms? In brief, it is the lack of retentive power of the abdomen, and this is only another way of expressing a neurasthenic musculature.

Massage helps all these conditions but little. It is increased power that is wanted, and here Swedish exercises come in as the panacea. Exercises adapted to cause healthy expansion of the lower ribs, to strengthen the abdomino-pelvic musculature, to invigorate the muscles of the back, these are the local meas-

ures adopted; while the other issues are the increased oxygenation of the blood, the more forcible contraction of the heart, the heightened tone of the visceral muscular coats, the obviation of pelvic and portal congestion, and a very important accessory aid to the cure of constipation.

Now, the value of these exercises is, that they can be done by themselves. After some tuition, the patient readily picks up the methods and can continue them unaided. The proper time for their use is twice daily; after breakfast, and in the evening before dinner; from fifteen to twenty minutes at a time.

Next to the proper choice of the exercises, and their fitting hour of institution, the most important point is the duration of their continuance. Now this is the rock on which most of the cases for Swedish exercises come to grief. In confirmed cases a year is at least required to make the improvement assured; I have seen a wholesale transformation in six months; but this time is not long enough to assure the permanency of the benefit. I insist in my most marked cases that they shall be continued for an indefinite time—at least for a year—preferably longer; and this, when once the habit has been formed, is most easily kept up, and sometimes never dropped.

Shorter periods of months, when a permanent and deep-seated alteration is required in the tissues, are waste of time and money.

Mountain Altitudes.

I place mountain altitudes as second to none of the remedial measures for neurasthenia. But the altitude must be rightly decided and the routine of life definitely ordered.

My introduction to the value of Alpine environment in neurasthenia was striking. An eminent lady, the victim of intractable hemorrhage, with much nerve wear and tear, was cured. The convalescence was incomplete. Some weeks elapsed; uterine leakage continued, the sense of ill-being persisted. At this juncture a move was made from Paris to the Schwarzwald. Here, at a height of 6000 feet, the uterine leakage in no long time entirely ceased, the sense of well-being fully returned. I made a mental note of the case, for while the prescription of the curetting was mine, the prescription of the altitude was the husband's.

I had not long to wait for a replica of the former case, only more so. A clergyman's daughter, aged about twenty-two, was brought to me in a pitiable state of neurasthenia, with pelvic symptoms. Further, the period occurred every fortnight, taking ten days on each occasion to its share; dysmenorrhea was acute.

She was ordered to Switzerland. Now for the sequel. Six months later there came into my consulting room a well-set-up rosy girl, in whose *tout ensemble* it was difficult to see the pallid, nerveless maiden of aforetime. The pelvic symptoms had disappeared.

During the past five years I have constantly had neurasthenic patients, and neurasthenic-hemorrhagic patients, in Switzerland, and, on the whole, with eminently successful results.

I have learned that many cases of uterine hemorrhage can be regarded as neurasthenic, in that the hemorrhage disappears under anti-neurasthenic treatment. And I have learned that mere residence in Switzerland, without a definite routine of life, dietary, and selected altitude, brings no more benefit than staying in England.

Thus a young lady of some twenty-four years, of strumous type, had suffered agonies from dysmenorrhea for some years. Coming under the care of a famous Harley Street gynecologist, he performed some operation, and sent her to Montreux. She returned not one whit the better, and the eminent gynecologist then proposed to this girl of two-and-twenty to remove the ovaries and stop the periods. To this she naturally objected. Coming under my care, I found a typical neurasthenic, with catarrhal uterus. I gave what local treatment was necessary, followed by a thorough course of massage and Swedish exercises, sent her to Switzerland to reside at a level of at least 3000 feet, with strict injunctions to continue milk and exercises daily. She remained in Switzerland nearly six months, made steady improvement the whole time, being able to do a good two hours' walk without fatigue, and with periods relatively painless in comparison with the former ones.

Consciously or unconsciously to the improving patient resident at altitudes, what actually goes on is a modified and specialized form of training. It is in this way and to this end that the invigorated powers of mountain life all work. It is by the increasing capacity for work that the progress is tested;

and this is training, pure and simple. Bodily work is divided into: internal work, i. e., circulation, respiration, etc., and external work, e. g., walking, etc. A properly balanced routine for a neurasthenic patient entails measures which will heighten the capacity both for internal and external work.

A mere passive or *laissez faire* existence at high altitudes fails to turn the new environment to more than a portion of its available account. To insure increased metabolism, I always add deep breathing exercises, and much additional milk, to the daily routine of my neurasthenic at altitudes.

What altitude should be chosen? My best results have accrued from a range of from 3000 to 5000 feet. I usually begin with 3000 feet. I have met with only one patient requiring to go lower for a few days to acclimatize. I do not find less than 3000 feet as a continued level of any permanent value. The patient who had formerly spent a fruitless season at a level below 2000 feet, returned later by my direction to Mürren (5000 feet) where the greatest and lasting benefit was derived. Patients who proceed at once to the higher altitude of 5000 feet almost invariably suffer from some of the symptoms of mountain sickness, which militate very greatly against satisfactory progress. As improvement proceeds, and the test is increase in sleep and increase in appetite, the patient may either do more, or mount higher.

Now, from practical experience, levels of 5000 feet are as much as the acclimatized neurasthenic usually derives benefit from. Why this limit? The worked out rationale is an extraordinarily attractive one. At an altitude of 5000 feet, in the town dweller, the signs and symptoms of mountain sickness begin. What are these? Here is the list as given by Leonard Hill: "shortness of breath, palpitation of the heart, nausea, loss of appetite, bleeding from the mucous membranes, vertigo, faintness, and, in particular, the difficulty of making any muscular exertion."

The striking parallel between these symptoms and those of the chronic neurasthenic can scarcely fail to attract attention. The similarity becomes more marked on further analysis. There is an acute and a chronic form of mountain sickness. Whymper styles these respectively "transitory" and "permanent" phenomena. Professor Angelo Mosso, the great authority on the life of man in the high Alps, also says, "we must

distinguish two forms of mountain sickness: the acute and the slow form." And of the slow form "this is not accompanied by nausea or vomiting; the diminution of appetite and other digestive disturbances are less severe than in the acute; the difficulty in breathing, the palpitation of the heart and lassitude, cause much less annoyance, although they are more persistent.

These descriptions of mountain sickness might well be taken as a generalized statement of the main symptoms of a chronic neurasthenic.

Professor Mosso definitely tells us that "the most striking phenomena produced in us by the air of the mountains are all of a nervous nature," and further, that "the cause of mountain sickness must be sought in a disturbance of the nutrition of the nerve centers, and not in a simple physical effect of diminished pressure."

I maintain, therefore, and with every apparent reason, that mountain altitudes benefit in neurasthenia by virtue of their general homeopathicity to the condition; that moderate altitudes benefit because the similarly acting influences are here attenuated; that high altitudes are ill borne because their action on the neurasthenic is of the nature of physiological overdose. To carry the parallel further, the altitude, like the dose, has to be adjusted to the susceptibility of the patient; and, commonly, a slowly increased altitude-dosage confers some sort of immunity.

What, then, are the specific values of mountain altitudes for neurasthenics?

There is the general heightened metabolism; for residence at high altitudes greatly stimulates bodily metabolism for those resident in the plains. This heightening of metabolism occurs in the resting as well as the active life. This was observed by Zuntz—a trained observer—from the second day on Monte Rosa, and lasted the whole of his three weeks' residence there. If the resting metabolism is markedly increased, still more is that of the walking. A slow walk on Monte Rosa exceeded the oxygen used in Vienna during a fast walk by twenty-five per cent.

There is the heightened insolation or increased effect of the solar light rays. The temperature may be at or about zero C.; but the skin is browned or inflamed by the sunlight. Widmark has shown that only the violet rays produce this inflammation

of the skin, and Cornu has shown that at the Riffelberg the violet rays in the sun's light are there more abundant.

There is the increased pulse and respiration frequency at moderately high altitudes; but here, as with metabolism, the increase is for those usually resident in the plains. Jaccoud found at St. Moritz (6000 feet), an augmentation of from 12 to 18 pulsations and about 5 respirations per minute. Veraguth observed a less increase—about eight beats per minute, and this chiefly in the first week. After stiff climbing, the increase is, of course, much greater.

Again, this applies only to dwellers in the plains; for the two hut-keepers had the same pulse rate at the end of the season as before they went up at the commencement. The increased pulse and respiration rates for town dwellers diminish after a few days; training, in fact, is going on.

There is the increased formation of hemoglobin, and an actual increase in the number of red blood corpuscles, probably due to the increased activity of bone marrow. Dr. Egger, at Arosa (6000 feet), on examining twelve persons, found an increased richness of blood in all but one.

Neurasthenic Types and their Treatment.

Cases of chronic neurasthenia practically present themselves as the ambulatory, the decadent, and the persistent invalid.

The ambulatory cases, such as frequent hospital out-patient departments and physician's consulting rooms, require a definite line to be taken at once if treatment is to be successful. The exciting causes are probably still in operation, and require hunting out and eliminating with conscientious thoroughness. Insufficient food and excessive tea drinking, late hours, insanitary conditions of work, oral sepsis—these are types of exciting cause that, while persistent, render treatment futile.

Next I must insist for the insurance of the cure of these cases, that some new element making for health be introduced into the daily life. I know none better, as a rule, than the systematic performance, year in and year out, of Swedish breathing exercises, providing that these are done at proper times, not slurred, and that additional milk is added to the dietary while these are being continued.

An exposition of what may be done in this way is given in a valuable paper by Dr. E. A. Neatby, in the *Monthly Homeo-*

pathic Review. These extra-therapeutic methods are absolutely necessary as accessory measures.

In these ambulatory cases, then, it is necessary to eliminate still operating causes; to exercise to the full therapeutic measures; to employ at the time, and as a persistent element in the life, some extra-therapeutic procedure.

Turn now to the decadent; and by this I mean the marked case of chronic neurasthenia with a steady trend downwards. The patient is still an ambulatory patient, but is unable to be of any service to herself or others from recurrent crises, as well as from a degree of ill-health that prevents continuous application. These cases recover with exceeding difficulty and slowness unless and until an initial Weir-Mitchell course be given. These decadent cases require a supervised treatment for two or three years, and the same may be said of these as of the merely ambulatory cases, they require some new element of hygiene infused into their lives to make the cure assured. Life in mountain altitudes, together with daily Swedish exercises, is frequently as excellent a measure as can be found to lead off with when the ambulatory stage is regained.

The persistent and chronic neurasthenics require for their restoration to health—and I believe that with sufficient time and sufficient trouble 95 per cent. of neurasthenic cases can be restored to health—I say the persistent and chronic cases require, beside a Weir-Mitchell initiation, a much more prolonged and varied scheme both of therapeutic and extra-therapeutic measures than can be dilated on here. Concerning the latter I may briefly indicate the high-frequency current, the electric light bath, static current from the Wimshurst machine, the use of hydro-therapeutic measures, as having all in their turn given me excellent results in various cases.

But I must again insist on the fact that as the illness is a polyphasic illness, that the treatment must be polyphasic also. In my own experience there is no one class of remedial measures, whether purely therapeutic, or purely Weir-Mitchell, or purely electrical, etc., that will cure the majority of neurasthenics. But I have, and I have reason to have, every confidence in the adequacy of modern measures of treatment, carried out on a basis of homeopathic therapeutics, to cure instances of this curse of the civilization of the twentieth century.

MAXIMS FROM ST. MARY'S CLINIC.

BY ERNEST A. HALL, M. D.

Surgery is too serious a matter to use as suggestive therapeutics.

The success of all kinds of quackery depends upon the fact that we have not been sufficiently honest with our patients.

Neurasthenia should never be made the basis of an operation.

In goiter operations be careful not to remove the parathyroid. It resembles a piece of fat, somewhat harder, and about the size of a Lima bean. Removal is apt to be followed by tetany.

If high pulse rate returns after removal of a part of the gland in exophthalmic goiter, it means that you have not taken enough. Operate again.

The antrum of infection in tubercular adenitis is usually the tonsil. Five per cent. of all tonsils removed here are tubercular.

To enlarge an opening in the direction of right angles to the fibers of the muscle, cut the fascia over the muscle. This will allow the muscle to stretch.

It is better to think wrongly than not to think at all.

The effect of palliative operations is generally pernicious.

We have no license to do mutilating operations because the case is hopeless.

Strychnine, nitroglycerine, and hypodermic syringes have no place in the operating room.

Forty per cent of "gastric" ulcers are in the duodenum.

The excretory duct of a hollow organ never lies at its lowest level.

Prolonged rest in bed after operations favors phlebitis.

Attacks of pain in the upper abdomen, passing off with vomiting, indicate gallstones.

Attacks of pain preceded by vomiting indicate appendicitis.

Gallstones free in the gall-bladder give pain in epigastrium, if located in the cystic or common duct the pain is more frequently to the right side and back.

Have supreme contempt for the surgeon whose methods of procedure upon a given case are different in the presence of the gallery, than if he were alone with his patient.

The ulcers of the stomach that come to this clinic have been "cured" eight or nine times before we see them.

Either remove an ovary or leave it alone, unless in extreme cases. Inflammatory cysts frequently follow conservative operations upon the ovary.

Draw your "conclusions" before your experience is large; that is your opportunity. Those of large experience are very careful of conclusions.

Long confinement in bed after operations may predispose to embolism.

Don't try to close the opening in femoral hernia.

Catarrh of the stomach, and chronic dyspepsia, through the genius of Dr. Wm. J. Mayo, are fast becoming a matter of history and in their place he is giving a pathology of organic stomach, liver, and duodenal disease, as definite and accurate as that which we possess of the lower abdomen. What Lawson Tait was to the pelvis, Wm. J. Mayo is to the upper abdomen. To those who doubt and to those who cannot afford to linger among the fogs of exploded theories and explanations, that do not explain, who continue to cover their ignorance by terms that are fast losing their meaning, the voice of St. Mary's clinic is "Come and see." The "fairy tale" description of diseases of the stomach as given by many standard authors resembles the "seein' things at night" experience of the Russian admiral, when he fired on the fishing fleet in the North Sea, more than the actual condition revealed by the ante-mortem demonstrations at this clinic.

The experiences of Mayo show that the frequent long histories of dyspeptic trouble preceding the development of cancer is probably that of gastric ulcer, and that there is a transition from ulcer to cancer, that is that cancer develops upon the ulcer base. In 1905, 47 or 49 per cent. had long histories. The pathological report was that in 54 per cent. the evidence was definite that the cancer had developed on an old ulcer base; in 26 per cent. the evidence was fair that the same was true, while 8 gave no evidence of preceding ulcer irritation.

If this be the case, that over three-fourths of the cancer cases had pathological evidence of pre-existing ulceration, ulcer of the stomach at once assumes a new surgical aspect, and should receive medical treatment.

Dr. Mayo states that acute ulcer, without severe hemorrhage,

is not a surgical disease; and, while he yet treats the majority of duodenal and gastric ulcers by gastro-enterostomy, the time is fast approaching when he expects that the method of treatment will be excision.

With respect to gall-bladder disease, the opinion is that were neuralgias, gastralgias, cardialgias forever buried, there would be more accurate diagnoses, as these rarely occur as entities, but usually as the result of some stomach or biliary lesion. More than ninety per cent. of the so-called neuralgias of the stomach, where there were few symptoms save sudden pain and occasional vomiting, proved to be gall-bladder trouble, while the remaining small number were of duodenal or appendiceal origin.

In uncomplicated gallstone operations the mortality is 2.47 per cent.; if the operation is postponed until jaundice supervenes, the mortality becomes 10.40 per cent. Hence the necessity of early action.

Tumors should not be watched, they should either be removed or let alone.

Cancer is a curable disease if we can remove the primary growth and the lymphatic ducts contributory.

Four out of five of tumors of the breast, at all ages, are malignant, one-half of the balance will become malignant.

Cancer of the breast with supraclavicular involvement is inoperable.

Sixty-two per cent. of ulcer of the stomach appear in men, 38 in women.



HYDRORRHEA GRAVIDARUM.

BY ALFRED A. LENDON, M. D.

I made Mrs. V.'s acquaintance first in October, 1896; she was then twenty-seven years of age, had been married for four years, and had gone through three confinements. Her first child was born alive, but only survived one month; the mother contracted measles, and the baby arrived a fortnight before its time, being born covered with the measles, from which it died. Her other children were born at full time; one was stillborn, whilst the other succumbed to diarrhea in a month; both were breech presentations. She did not suckle

either of her living children; she had not miscarried; her husband denied having had syphilis. I found the patient to be suffering from simple sub-involution, without any displacement, tumor, or adnexal complication; she was curetted, and a pessary worn for a year; after this she remained well for about five years, able to do her work, and regular as to her menstruation. In 1901 she had some fresh symptoms, for which she was again "scraped" by her doctor in the country.

No fresh trouble occurred till one Sunday in February, 1905. She was lying down just after dinner, when a child who weighed thirty-two pounds fell across her abdomen; she vomited all the rest of that day, and had crampy pains at night. The next day the pain was too great for her to do her washing, and it had never completely left her when she consulted me in July. She told me that she had a natural period in March, ending on the 7th, but missed her period in April. About the middle of the month she went to her doctor on account of the pain in her lower abdomen, which was troubling her both by day and by night and interfering with her sleep; ever since the accident, too, she had complained of frequency of micturition, both by day and by night. The doctor informed her that she was not pregnant, but that the womb was displaced, and he inserted a pessary. After this visit to the doctor she had slight hemorrhage that night and during the next day, but she did not consider that it was menstruation. At the end of a fortnight she consulted him again, and on this occasion he thought that she was pregnant, and therefore he advised her to go home and put up with her pain; but the pains became worse, and when the womb was examined, it did not appear to the doctor to have enlarged at all during the intervening four weeks. At the end of May patient had what she considered to be a natural period; consulting her medical adviser towards the end of June she was assured that there was no increase in size of the uterus since the previous month, that the fetus was dead, and that it required to be removed, for which purpose she was advised to go into his private hospital.

On July 17 I found that the uterus was enlarged and reached half way up to the umbilicus; there was milk in the breasts. A small fibroid was felt in the posterior lip of the cervix, and I thought that I could feel another springing from the anterior aspect of the corpus uteri; a little hemorrhage had occurred on

July 15, and for some time there had been slight leucorrhea. A few days later I satisfied myself as to the existence of the rhythmic uterine contractions and of fetal movements, but I could neither make out ballottement nor hear the fetal heart. The patient was not conscious of having quickened. With a pessary and rest in bed the pains were greatly alleviated, and the urinary trouble almost disappeared. On August 10 there was slight hemorrhage which lasted two days. After this date she experienced a new symptom, viz., a loss of fluid by the vagina, which steadily increased in amount week by week; occasionally there was a slight admixture of blood, but a sample saved in the middle of October showed only the slightest trace of albumen, and no sugar. Under the microscope the deposit was seen to consist of large oval epithelioid cells; the fluid itself looked like urine, was neutral, with a specific gravity of 1012, and it was inodorous, even after standing for forty-eight hours, although the patient complained of the odor of the cloths saturated with it. From her estimate, even allowing for errors, I should be prepared to believe that she lost two pints in twenty-four hours, and she managed to collect about two ounces in one hour by sitting on a bed-pan.

At the end of August I first heard the fetal heart, and this confirmed me in my opinion that I was not justified in terminating the pregnancy, although the patient was most anxious to have it done, partly because she was wanted to return to her home, but chiefly because she despaired after so many years of giving birth again to a living child. With all this loss of fluid she did not strike me as being in any way ill, but merely anxious and worried about her condition. However, the matter came to an abrupt termination on October 17; the previous evening pains set in, and at 5 P. M. on the 17th a stillborn female child, weighing four pounds, was born in the first breech position. No distinct rupture of the waters could be recognized by the patient, nor did I feel any bag of membranes; there was no bleeding. The patient made a rapid recovery. Nothing abnormal was noticed in the placenta; the fetus showed no signs of congenital syphilis, either externally or internally.

Remarks.

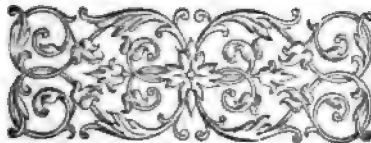
The birth took place about eight weeks before the calculated date, and this is confirmed by the weight of the fetus. It is said

that labor is usually premature in this affection, which generally manifests itself in the later months of pregnancy, as in this case. The fluid seemed to be leaking away almost constantly, by night as well as by day, though sometimes it came away in a gush; its steady increase in amount week by week was a notable feature. Multiparæ are said to be more prone to it than primiparæ. The case presented difficulties in diagnosis before it came into my hands, but when I saw the patient first the question of pregnancy could be settled beyond a doubt, and within a few days there was proof that the child was alive. Placenta previa was naturally my first fear, but when in addition to hemorrhage there was this watery discharge, I began to think of the possibility of the symptoms being caused by hydatidiform degeneration of the chorion. However, no vesicles were passed, nor was the enlargement of the womb by any means inordinate. After a time it became clear that it was a case of *hydrorrhea gravidarum*.

The nature of the disease and the source of the fluid have been matters for speculation for some time. Modern authorities attribute the discharge of fluid to a chronic catarrh of the endometrium, and dignify the affection with the name of *endometritis decidualis catarrhalis vel glandularis*; they assert that there is a glandular hyperplasia of the decidua, with persistence of the glandular ducts, as well as of the potential space between the decidua vera and the decidua reflexa, which is said to be normally obliterated during the fourth month of pregnancy. But it would almost appear as though from the solitary symptom which can be recognized clinically they have artificially constructed a morbid condition of the decidua to meet requirements. At all events they adduce no evidence of the disease having been met with post-mortem, although, if wrong, I should like to be corrected upon this point. If endometritis existed previously to the pregnancy we should expect it to cause abortion in an earlier stage of pregnancy. Nor does the statement that "this condition precludes the fusion of the decidua vera and reflexa" appear to be justified, seeing that it is less usual for it to appear during the early months of pregnancy. Assuming this space to be closed in the usual manner, there does not appear to me any great difficulty in imagining that the reflexa may be again separated from the decidua vera, for it is difficult to understand what organic adhesion can take

place between two mucous surfaces whose vitality is maintained; pressure apposition may cause the two layers to appear to be united in the same way that two sheets of paper may be compressed so as to be with difficulty separated.

More important perhaps than these theoretical considerations is the question as to whether the fluid could be derived from any other source than the decidua. Could it be amniotic fluid? Now it is generally asserted that the escape of this fluid is inevitably soon followed by the onset of labor. Whilst this rule holds good generally, there have been notable exceptions reported, such as Matthews Duncan's case, where there was an interval of forty-five days, at the end of which a remarkably compressed, though living, fetus was born, and there are instances of paracentesis having been performed through an error of diagnosis, without interruption of the pregnancy. Then, again, there is a possibility of water being discharged from a cavity persisting as a relic of the celom between the amnion and the chorion. Such I have thought might have been the source of the fluid in a case such as the following: Mrs. M. saturated her bed with the "waters," and I remained all night in expectation of being wanted; the birth was deferred for thirteen days, but it is less easy to explain by this theory a case such as that of Mrs. N., who felt a gush of water come from her on March 10, which was followed by pains; she sent for her nurse, but nothing further happened until the 15th, when a similar gush occurred, and she sent for me; but there was no sign of true labor till the 27th, when it took place precipitately. I should doubt whether we need seriously consider the possibility of such an amount of fluid as I have described coming either from the cervical glands or those of Cowper. Water might escape from a second ovum, which was retained in utero after the rupture of its amnion.



A CASE OF PUERPERAL ECLAMPSIA.*

BY JAMES JOHNSTONE, M. D.,

Assistant Physician for Diseases of Women, London Homeopathic Hospital.

Mrs. P., aged thirty-four, first consulted me in July, 1904. She had been married for three years, during which time her periods had been regular. Her last period had been ten days overdue, and had lasted for fourteen days. The history seemed to point to an early miscarriage. On examination I found the uterus much retroverted and retroflexed, but easily replaced to the vertical position. There was also prolapse of the left tube and ovary. Under anesthetic given on account of the narrow and tender introitus, I replaced the uterus to normal position with the sound, and fitted suitable ring. This proved to be comfortable and efficient; she gained weight, had better health, and in four months became pregnant. At the third month of pregnancy I deemed it advisable to remove the ring, asking her to see me at the end of the seventh month for the purpose of routine examination to determine the condition of pregnancy and associated state of the important organs and functions.

The condition on examination appeared to be normal, the head was lying in the pelvis, and fetal heart-sounds could be heard. Incidentally she mentioned that her feet and legs had been swelling, and I found that this was more than is usual at this state of pregnancy, there being slight edema below the knees. Examination of the urine revealed the presence of albumen, the quantity on boiling with nitric acid and allowing to stand being one-sixth. Rest, a milk diet, and merc. cor. 3x were ordered. During the next month the edema increased very rapidly and extended to the thighs, abdomen, and rest of the body, so much so that she experienced great difficulty in getting into bed, her feet being "like logs." The amount of albumen in the urine had increased to two-thirds. She had now reached the end of the eighth month, and in view of the serious condition of the albuminuria and general edema, I deemed the time had come for averting a catastrophe.

My first step was to avail myself of the advice of my col-

* Presented to the Section of Surgery and Gynecology of Br. Home. Society.

league, Dr. Burford, who saw the patient on the morning of August 9, and concurred with me that an immediate and rapid inducement of labor was the only course open in the interests of mother and offspring. At 10.30 A. M., under an anesthetic, I dilated the cervix with the fingers sufficiently to allow the introduction into the lower segment of the uterus of three gauze sponges. These were left inside for twenty-four hours without inducing any labor pains beyond a backache. They were then removed, and the membranes ruptured. The os was now about two inches in diameter, the edges soft and thinned out, while the fetal head could be felt presenting. The labor pains came on at once and increased in number and severity. The patient began to be drowsy and slept between the quickly-recurring pains. It may be noted here that the urine for some days had been becoming scanty, and during the previous twenty-four hours was only one ounce in quantity. At 7 P. M., I called and found labor proceeding satisfactorily, the head engaged in the cervix, which was dilating normally. At 12 midnight, I was hurriedly called to find the patient passing into the comatose stage of an eclamptic fit. Half an hour before, the nurse had noticed the patient fixing her gaze on the ceiling. When spoken to about it, she moved her eyes for a few moments in the usual manner, but they became fixed again. Then her head became twisted to one side, and a very violent seizure ensued, lasting about ten minutes. Gradually the tonic and clonic contractions passed off, and the calm of unconsciousness supervened.

In this state I found her, and knowing the capabilities and nerve of the nurse, I at once administered chloroform and proceeded to delivery by forceps. Though the head was high up, there was no difficulty in adjusting these. The head was quickly pulled down to the perineum, which proved tight and resisting. A lateral incision with scissors into the right side of the vulva soon overcame this difficulty and permitted a rapid delivery. However, to my surprise, the uterus, which had been noted to be unusually full, probably with increased amniotic fluid, did not subside in the usual way, and on examination there was discovered another fetus with head presenting within the cervix. This was in turn seized with the forceps and soon delivered. The placenta came away easily, the lateral perineal incision was sewn up and the vagina flushed with perchloride

of mercury douche (1-3000). From the first onset of the fit, which lasted half an hour, the final toilet of the vagina and perineum, including the time for the extra-stringent anti-septic precautions, one hour had elapsed. The patient slept on for two hours and woke up quite conscious. Convalescence was normal and uneventful. No more fits occurred, the edema rapidly subsided, so that by the third day she had become quite thin, urine had been passed freely, and the albumen had reduced to a trace.

On the eighth day the albumen increased a little, due, it was thought, to a too generous and albuminous diet. On return to milky food, the albumen diminished. Diet is now more generous, but there is still a faint trace of albumen. Mother and children did well. The latter, being a month premature, were kept snug with cotton-wool and hot bottles.

Remarks.

A more satisfactory result was attained than seemed probable early in the progress of the case. Statistics show that with intra-partum eclampsia, of which the foregoing was a case, the maternal mortality is about 45 per cent., with a like mortality for the fetus. Ante-partum eclampsia shows a maternal mortality of about 45 per cent., and fetal mortality of 69 per cent. Unless prompt action had been taken when the clinical signs increased in severity, this case might have been one of ante-partum eclampsia, with its almost doubled risk to the mother and trebled risk to the children.

The Cause of Eclampsia.

But before dealing with the question of procedure in such cases let me say a word or two about the cause of eclampsia. Here pathologists and clinicians are still groping in the dark, but the more recent and reliable observations would point to toxic material in the blood as the probable cause. The origins of the toxic elements are various. Some (Schmorl) ascribe them to the placenta, where certain ferments are supposed to originate and gain access to the maternal circulation. Others, again (Fleisher and Bouchard), look on the toxemic condition as allied to uremia, where extractive materials, present in the urine, become retained in abnormal amount in the body and produce the convulsions. Among the latest observations may

be mentioned those of Ludwig and Savor, who believe that as a result of certain metabolic processes, dependent on the deranged metabolism in pregnancy, ferments are liberated, producing an auto-intoxication. The action of the ferment is expressed by the symptoms of eclampsia. Its removal takes place by the urine after the convulsion. The origin of the ferment, whether in liver, urine, or elsewhere, is not determined.

Warning Symptoms.

The main point of paramount clinical value, which we may cull from each of these various theories, stands out clearly and is itself our guiding idea on which to take action; it is, "Suspect any interference with the permeability of the ureal filter."

Hence albumen in the urine of a pregnant woman must be looked upon as a grave omen. Most of us know this, but how few examine the urine of their pregnant patients with that regularity which duty calls for. Some hold that the diminution in the amount of urea is the most serious sign, and certainly in the case just narrated, the passing of one ounce of urine in twenty-four hours was quickly followed by the eclamptic seizure.

Preventive Treatment.

Time will not permit me to refer to many other interesting and all-important problems relating to eclampsia, so I shall pass to a few sentences relative to treatment. Here, as in everything, prevention is better than cure, and is the keynote of treatment in this dire condition. Taking the toxemic origin as our working hypothesis we must limit as far as possible the tendency to produce urea and other nitrogenous metabolic by-products.

The precautionary measures to be observed are summed up very succinctly by Jewett, of New York, in his "Practice of Obstetrics," and may be set down here.

- (1) Reduce the amount of nitrogenous food to the minimum.
- (2) Limit the production and absorption of toxic materials in the intestine and tissues of the body, and assist in their elimination by improving the action of the bowels, the kidneys, liver, skin, and lungs.
- (3) If necessary, remove the source of the fetal metabolism

and of peripheral irritation in the uterus by the emptying of that organ.

Treatment.

This last clause indicates also the curative line of treatment, and is exemplified in my case, when, on the rapid increase of albuminuria and edema and on the like diminution of urea, immediate steps were taken to empty the uterus.

In conclusion, a few practical points may be of value:

(1) Operative intervention must be preceded and accompanied with most rigorous antisepsis and asepsis. The added danger of manipulation and possible sepsis have been urged against interference or in favor of delay. But the obstetrician, who knows his methods and is, from experience, confident in their precision, need fear no bogey.

(2) Full anesthesia, to allow of full and rapid dilatation, with little damage to the cervix, is essential to rapid operation and the subsequent welfare of the patient.

Therapeutic Measures.

(3) As regards therapeutic measures, my experience is confined to this case. Influenced no doubt by a pathological symptom, when albuminuria was first discovered, I chose mercurius corrosivus, strength 3x, as the medicine. That was continued up to confinement, and, with the exception of a few intercurrent remedies, up to this present date. Though the happy issue cannot with certainty be claimed for the medication, still the fact remains that under its administration good resulted.

The therapeutic question in all its varied aspects I will therefore leave to colleagues who I know are well fitted to discourse to us with profit from their wider experience in that condition, so dreaded by the obstetrician, puerperal eclampsia.



Book Reviews.

SURGERY: ITS PRINCIPLES AND PRACTICE. By Various Authors. Edited by WILLIAM WILLIAMS KEEN, M. D., LL. D. In five volumes. Volume I. With 261 text-illustrations and 17 colored plates. W. B. Saunders Company, London and Philadelphia, 1906.

This system when complete will represent the work of the editor and eighty contributors, who have been selected in this country and in Europe on account of their prominence in the department of surgery. From the list of names the contributors may be said to represent the most noted men of the profession in this country and abroad, and this fact alone should argue well for the success of the work. The first volume opens with "History," which is a brief sketch of the great surgical names, those pre-eminent in their art, from Hippocrates to modern times. Surgical Physiology, by Dr. Geo. W. Crile, is a résumé of his studies in circulation, respiration, and blood pressure and their clinical applications to surgery, in which field he has achieved a great reputation. These researches have introduced new factors into the treatment of shock and collapse and their applications to operative surgery have been very thoroughly considered. The results have been obtained by blood-pressure observations made by Dr. Crile and his assistants during one thousand operations and represent absolutely new and useful data for the operating surgeon. Dr. John Da Costa has contributed an interesting chapter on Examination of the Blood and its significance in surgery. The subjects of Inflammation, Infection and Immunity, Suppuration and Gangrene are dealt with quite extensively by Hek-
tean, Adami, and Freeman. Among the other excellent features are chapters on Tumors by J. Bland Sutton, Erysipelas and Tetanus by Chas. Harrison Frazier, Syphilis and Chan-
croid by Edward Martin, and Surgical Tuberculosis by Da Costa. This first volume includes, in addition, by other well-known authors, articles on constitutional diseases which either become at some time cases for surgical interference or by their pathology serve to explain surgical processes. The whole presents in an excellent manner the fundamental principles of surgery viewed from the most modern standpoints. The illustrations are new and original, and the colored plates are artistic reproductions of photo-micrographs and gross pathological specimens.

Prof. Keen's wide experience and great reputation eminently fit him for the task in hand, and the result will be the assembling of much new surgical wisdom in an attractive and comprehensive manner.

A TEXT-BOOK OF DISEASES OF WOMEN. By BARTON COOKE HIRST, M. D., Professor of Obstetrics, University of Pennsylvania. Second edition, revised and enlarged. Octavo of 741 pages, with 701 original illustrations, many in colors. Philadelphia and London: W. B. Saunders & Co., 1905. Cloth, \$5.00 net; Sheep or Half Morocco, \$6.00 net.

Dr. Hirst may well be congratulated upon the publication of such a work as this, a second edition of which has just appeared. Written on the same lines as his "Text-Book of Obstetrics," to which it may be called a companion volume, it gives every promise of obtaining a similar success. The palliative treatment of diseases of women and such curative treatment as can be carried out by the general practitioner have been given special attention, enabling physicians to treat many of their patients without referring them to a specialist. Indeed, throughout the book great stress has been laid upon diagnosis and treatment, and the section devoted to a detailed description of modern gynecic operations is without doubt the most clear and concise we have yet read. In this second edition the revision has been thorough, introducing, however, only such matter as promises or has been demonstrated to be of permanent value. Forty-seven new illustrations have been added and thirty of the old ones replaced, the work now containing a collection of seven hundred and one beautiful original illustrations, many of them in colors. We take much pleasure in recommending Dr. Hirst's work to the medical profession generally.

BEFORE AND AFTER SURGICAL OPERATION. By DEAN T. SMITH, B. Sc., M. D., Professor of Surgery and Clinical Surgery, University of Michigan, Homeopathic Department, Ann Arbor. Boericke & Tafel, Philadelphia, 1906.

Dr. Smith has written a very useful brochure, intended for the needs of the general practitioner who is called upon to assist in the care of patients operated at home and also for the hospital intern who finds himself often without detailed information concerning the care of surgical cases.

Preparation for Operation, Post-Operative Care, Ordinary and Special Complications, and Dietetics are among the subjects of special value. Then follow suggestions for cases involving certain regions of the body, with whatever is peculiar to that particular operation or condition. An extremely commendable departure and one of great utility is the indication for the use of homeopathic drugs in the management of surgical cases.

THE AMERICAN ILLUSTRATED DICTIONARY. All the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and kindred branches; with over 100 new tables. By W. A. NEWMAN DORLAND, M. D. Fourth revised edition. Octavo; 836 pages, with 293 illustrations, 119 of them in colors. Flexible morocco, \$4.50 net; thumb indexed, \$5.00 net. Philadelphia and London: W. B. Saunders Company, 1906.

The original aim of the author was to produce a volume of convenient size which would be an up-to-date Medical Dic-

tionary sufficiently full for the requirements of all classes of medical men. The resulting effort was a work that became extremely popular, as evidenced by the necessity for a fourth edition. The numerous additions to the vocabulary of medical science have been included in this volume, over two thousand new words, pictorial features have been enhanced, tables have been amplified, and the whole thoroughly revised. The book is attractive in appearance and convenient in size, with compact and clear typography.

AMERICAN PRACTICE OF SURGERY. A complete system of the science and art of surgery, by representative surgeons of the United States and Canada. Edited by JOSEPH D. BRYANT, M. D., and ALBERT H. BUCK, M. D. Complete in eight volumes. Profusely illustrated. Volume I. Wm. Wood & Co., New York, 1906.

The editors of "American Practice of Surgery" have undertaken the task of producing a work which would represent the best thought and most comprehensive experience of American and Canadian surgeons. The contributors selected to assist in this immense work are individuals from different parts of the country who have attracted attention to themselves by work in special fields of surgery. Little or no restriction has been placed upon the co-workers so that, as the editors say, "this method while necessarily causing a certain amount of repetition, the redundancy is counterbalanced by the fact that the sum total of information supplied could not fail to be greater than if a closer plan of limitation were followed." The *Evolution of Surgery*, by Stephen Smith, the Nestor of American Surgeons, is a record of the past which shows the educational and experimental features of the early periods of development of the art and science of surgery in this country. This is a very interesting feature, the article is well illustrated, and while not a biographical sketch nor the record of even the notable achievements of surgery, shows the development of the pioneer and his sources of inspiration. Much space is devoted to Surgical Pathology, complications and sequelæ, while those chapters on General Surgical Diagnosis, which include the Diagnostic Value of the Body Fluids, the Technique of Radiography, the Interpretations of Radiographs, are new and valuable contributions to modern observation and technique. Under General Surgical Treatment are included Infection, Disinfection, and Sterilization, Ligatures and Sutures, Surgical Dressings, Instruments, and a detailed account of the best surgical methods in vogue at the present time. As a reference book it is one to be welcomed to our surgical literature for its practical utility, its value as a record of the advanced methods and thought of this period. The publishers have apparently spared no pains or expense to make the edition worthy of its subject-matter.

THE TEST PROVING OF THE O., O. & L. SOCIETY, arranged and condensed by Dr. HOWARD P. BELLOW, M. S. With illustrations. Boston, 1906.

The test proving of the American Homeopathic Ophthalmological, Otological, and Laryngological Society originated from a desire on the part of its members for a more accurate and technical knowledge of the effect of drugs upon special organs which particularly come within their province of study. The result was the formation of committees in thirteen of our largest cities, the resulting work being the proving of belladonna. The handsome volume of 665 pages with illustrations and several plates arranged and condensed by the general director of the reproving, Dr. Howard P. Bellows, represents the findings of an experimental study of the effects of belladonna upon the healthy human organism. It is a record of pure drug proving with small doses which as the general director points out "will not show the exaggerated symptoms of the older symptomatologies due to observations from the effect of overdoses, liniments, plasters, berries, etc." The necessity of such work in the homeopathic profession is the crying need of the hour, for but little original investigation of any value has been done for years. We are in reality pursuing our calling as specialists in materia medica on results obtained years ago, prescribing drugs for diseased states of the human body on symptoms developed before the present methods and instruments of precision were in vogue. Errors of necessity crept into the work of our zealous pioneers and it is a duty too long delayed that this generation refine the old, and if possible, create a new and more definite form of drug pathogenesis. Too much credit could not be given to Dr. Bellows and his associates for this compilation, which is the most important addition to our armamentarium in years.

Current Comment.

M. O. Terry, M. D.:

Can women escape *normal labor pain at parturition*, and has a law been evolved which will do away with the agonizing features of childbirth?

It is now more than fifteen years since I began my observations on the value of oleaginous material as a relaxant and as an assistant to the elasticity of muscular fibers. My first thought on this subject was the result of an experience in consultation with a physician in a case of so-called dry labor. The

doctor called me for the purpose of securing my services for instrumental delivery. My examination revealed a condition not uncommon in which the muscular fibers resist and become irritated under the normal process of labor, as a result of which there exists exaggeration of temperature, and, at times, an edematous state of the parts supervenes.

I had slipped a pound of vaseline into my pocket and requested the doctor to allow me to use it freely and defer instrumental delivery for a short period. The method pursued on this occasion was the introduction of vaseline in as large quantities as was possible, the same being passed into the neck of the uterus, during the cessation of pains, by a rotary manipulation. This being done we took a stroll for half an hour and on our return arrived none too soon to greet the advent of the new-born babe, which occurred without instrumental assistance.

I have never been able to dislodge from my mind the importance of that experience, which has since proved the basis of a philosophic fact bearing upon other conditions of a surgical nature.

A case quite similar to the one just cited occurred within two years; that of a surgeon's wife. The surgeon was very apprehensive, fearing laceration, but would allow nothing to be done, preferring nature to take her course, and simply desiring my presence for its moral effect. After a period of the usual severe pains incident to a primipara, the doctor accepted my suggestions and allowed me to use a lubricant, which speedily led to a relaxation of the parts, and the woman was delivered with instruments without rupture. In this case I simply pushed back the tissues, between pains, and used about a quart of sweet oil, insinuating the same by the method described in the preceding case; namely, rotary dilatation.

It is to be hoped that I am not mistaken in believing that most cases of parturition can be carried through as the one which I shall now report.

I received a telephone message three weeks since requesting me to be at the hospital at a certain hour as the patient was on her way, some ten miles out, having uremic convulsions. I arrived at the hospital soon after the patient was received and found her physician administering chloroform in order to control the convulsions. He stated that her term of gestation

was considered to be complete within three days. She had had no pains. I asked the doctor what he desired me to do, and he replied: "Anything to save the life of the woman, and the child also if possible." The ordinary procedures published and accepted as legitimate, when the induction of labor seemed indicated and was made necessary by existing circumstances, were discussed between us, but did not seem adequate to the occasion. The doctor was quite positive in his conviction that ordinary methods would be of no avail, and begged me to institute any measures which in my opinion would speedily deliver the woman.

Taking my position in front of the patient—she was turned crosswise on the bed, with legs flexed, as in the position for instrumental delivery—and with fully a pound of vaseline at my side, I began the process of insinuating the same into the vaginal outlet. The cervix was not at all dilated and presented no indication of labor. I was soon able to introduce my finger into the same, after using a sound, and then began what I have denominated a rotary manipulatory dilatation. The parts yielded comparatively rapidly, the interior of the os being thoroughly lubricated, and under a similar process of manipulation the vagina and os began to show marked signs of relaxation, but no contractions were at any time present in this case.

I became exceedingly interested in what I was doing, even under the trying circumstances presented at that moment. I could soon enter my hand, and arm for that matter, into the vagina, and as soon as the os was sufficiently dilated the forceps were placed in the high position and the child delivered alive and in full vigor. There was no laceration. From the beginning, when I took my position in front of the patient, until the completion of the entire operation, was just one hour and twenty minutes. She was unconscious for two days after delivery, but left the hospital four weeks from the day of entrance in excellent condition and nursing her baby. A chemical analysis and microscopical examination of the urine showed it to be normal, although, as might have been expected, early examination showed marked albuminuria.

Wm. Gillespie, M. D.:

It is in the *administration of chloroform* that the diagnostic skill and discriminative judgment of the obstetrician receive their crucial test. The rule to administer a few whiffs of chloroform at the beginning of each pain, and only then, does very well as a general starting point in obstetrical anesthesia, but if we would derive from it all the advantages which its physiological effects vouchsafe to us the rule will be almost as frequently broken as kept. To get the greatest possible relief from the smallest amount of chloroform it should be given promptly at the onset of the pain. If given promptly at the onset and the patient is told to breathe quickly and deeply, you will produce a feeling of giddiness before the acme of the pain, and a few drops will suffice; when, if the administrator moves slowly, and the pain becomes severe before the effect is produced, not only will more chloroform be required, but the immunity from pain will be less. You occasionally find a patient who becomes greatly excited when chloroform is given, and I have frequently heard this spoken of as a reason for its withdrawal. If the withdrawal of the anesthetic was necessary under such circumstances it would be particularly unfortunate, for it is in just this class of patients that the sufferings of labor are most keenly felt. All that is necessary is to push the chloroform until the stage of excitement is past, when you may gradually allow them to return to a state of partial anesthesia without a return of the hysterical symptoms. The reason for giving chloroform with the pain and withdrawing it in the interval is in order to give relief without lessening the force of the contractions. When, however, the patient is restless between pains, it is a good idea to prolong its administration sufficiently to secure a tranquil interval, and by such a use of the drug the force of the contraction is oftener increased than diminished. The contractions will usually, in these cases, come less frequently, and may appear to the unobservant to be of shorter duration, but if an examination is being made at such a time it will be observed that the contractions last in reality much longer than with the patient influenced by anesthesia. It is only during the height of the pain that external signs of suffering are apparent. So deceptive may this condition be that the bystanders are frequently astonished to find great progress being made when they supposed the case to be stationary.

We occasionally find a woman who has such an antipathy to pain and such a yearning for slothful ease, that, having tasted of the comfort which is breathed in from the chloroform mask, she resolves to suffer no more. The onset of a pain seems only to stimulate her to more frantic demands for relief, and, having secured the coveted anesthetic, she draws it in with avidity and labors not. In many cases this condition of affairs could have been prevented if the physician had made a plain statement to the patient before labor began. I usually make the following statement to the patient: "I do not believe in allowing the patient to suffer any more than is absolutely necessary, but in order to get all the comfort possible out of chloroform you must assist me. If you will bear down when I request it and do as I request at all times, I can make you quite comfortable. Just in proportion to your shortcomings in rendering voluntary assistance will I be compelled to withhold the chloroform. If the pain is severe, don't cry out, but breathe in, and when I say bear down, do so as long as you can hold your breath, and not in little spasmodic efforts interspersed by calls for relief." If this lesson has been given before severe pain has distracted the attention of the patient it is usually quite easy to keep them working properly, and if they work properly we can proportionately increase the chloroform and decrease their discomfort. In about 25 per cent. of my patients there is practically no suffering after the administration of chloroform is begun. Probably an equal percentage suffer quite severely in spite of obstetrical anesthesia, but I am certainly safe in saying that in any case more than half of the suffering can be abated. In the case of the woman who does not believe sufficiently in reciprocity to trade effort for comfort, I usually withdraw the drug entirely, with the plain statement that when she gets ready to purchase comfort by obedience I have a bottle of it for sale. Women may not be logical creatures, but my experience with them leads me to believe that there are few of them so illogical as to be unable to reason from cause to effect when the penalty follows so speedily upon the heels of transgression. These are the cases in which chloroform necessitates forceps delivery. If we yield to the importunities of patient and friends we must push the anesthetic beyond the bounds of obstetrical anesthesia, and thereby weaken the involuntary efforts; but if the attendant will insist at the

beginning upon being obeyed and immediately assess the penalty for disobedience, such cases will seldom be encountered. When the patient has had it thoroughly impressed upon her that the thoroughness of the anesthesia depends upon her voluntary efforts, it is astonishing how far the drug may be pushed without her losing the subconscious consciousness that she must work. Many patients who have worked faithfully and responded to my every request will tell me afterward that they were blissfully unconscious of everything from the beginning of the anesthetic.

When the resistance to the advance of the fetal head is chiefly muscular, chloroform will, by relaxing the parts, hasten labor. If the woman is nervous and hypersensitive she may, by squirming during contractions, prevent the expulsive forces from acting at the same pelvic axis for two consecutive seconds, and thus indefinitely delay the labor. If such a woman is made comfortable progress is secured. If she be made absolutely comfortable she will bear down with vigor, because her effort does not accentuate her pain, and progress under such circumstances is sometimes astonishing. We do occasionally meet with cases, however, where chloroform causes delay, and while in my experience this is probably not oftener than once in twenty times, we must be prepared to meet it. There are but two alternatives—withdrawal of the drug and forceps. The inexperienced will be wise to choose the former, but as these cases are usually met with where pains are at best ineffective, and as forceps are absolutely safe in cases where the only difficulty is inertia in the second stage, most men of experience will choose the latter course.

♦ ♦

S. S. Graber, M. D.:

We have not improved on Dr. Emmet's instructions in regard to *the douche*: the trouble is, they are either forgotten or neglected being read. It is certainly a therapeutic measure, valuable in proportion to the intelligence of its use.

It should be used freely, one or two gallons each time but not too frequently. To have a patient continually reminded of a douche pan is a bad thing and does more harm than good. It is necessary, however, to give them explicit instructions in regard to its use; that it is not so much for cleansing as for its benefit to diseased and congested tissues.

It should not be taken on the morning of her treatment, or during the time the dressings are in place, or during the first few days of menstruation, and unless ill in bed should be taken only at night on retiring after she has finished her night toilet and entirely ready for bed; then the tampons are removed and she takes one or two gallons of water at a temperature varying from 110° to 120°, on a suitable pan, in bed, with hips elevated. When finished she is not allowed to get out of bed again, for the pores of the skin are relaxed and she should be in a gentle perspiration. Any method that compels her to walk about the room after taking it defeats its purpose. A thorough douche given two or three times a week is better than all the waters of the Amazon used haphazard. Salt in proportion of a tablespoonful to a gallon of water may be added. If an astringent is required alum, copper sulphate, and boric acid are useful. Witch hazel also is very beneficial. One thing requires careful attention and that is where a patient has a uterus low down and retroposed in such a way that the finger or nozzle of the syringe on being introduced comes directly on and in front of the neck of the uterus, the water of the douche will not get very much back of this organ, where it should go, unless the end of the nozzle is made to dip down along the perineum and the posterior vaginal wall, back into the posterior fornix. Very often the secret of lack of improvement is here. We feel that in a general way, there is too much douching and improperly conducted. No treatment should be so all-absorbing as to be a tax on the patient's mind. It is never necessary to continue douching over long periods. Its prolonged use doubtless has the tendency to the organization of adhesions; at any rate, they are always strong and dense in cases that have been under a long period of douching previous to operation.

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Hampden Carr, M. D.:

I will report a case of *rupture of the uterus*. On April 4, 1906, at 8 A. M., I received a message to go to Mrs. D., a confinement. I went the sixteen miles as quickly as possible, and on arrival found the patient, a woman of about thirty years of age, and this her third confinement. She was pale and anemic, had a bronchitic cough, and was somewhat collapsed, with a small thready pulse. Labor had begun at 1 A. M., and continued with very strong pains until about 7 A. M., when

they suddenly ceased. It had been a breech presentation, and the body and shoulders were born. This was the condition when I arrived. I gave an anesthetic, and on making medium traction I delivered the head, which was hydrocephalic.

The placenta showed no inclination to come away, so I introduced my hand, as I thought, into the uterus. I felt a large, rounded tumor in the posterior part, and on further examination found that I had put my hand through a large tear in the anterior and lower segment of the uterus. I removed the placenta, packed the uterus with boiled strips of muslin—that being the only material available, for I had no gauze with me. I returned, got my colleague, and the necessary instruments, etc.

We went back to the patient's house, and at about 2 o'clock I operated. I opened the abdomen in the middle line, and found a large transverse tear in the lower segment of the uterus, extending over fully half its circumference. In the region of the tear the uterus was as thin as a thick sheet of paper; it was soft and friable, and there seemed to be an entire absence of muscular tissue. I sewed up the tear with chromic gut. The peritoneum was full of blood-stained fluid and clots. I sponged it out with dry sponges made of sterilized gamgee tissue, making it as clean and as dry as possible, put a gauze drain in the posterior fornix, and then closed the abdomen. April 5.—The day after operation the patient had a good deal of vomiting, pain, and flatulence, with distention. I gave her mag. sulph. and turpentine enemata. Temperature, 100°; pulse, 110. April 6.—Bowels opened; sickness stopped. I removed drain, but replugged opening loosely with gauze. Temperature, 99.4°; pulse, 100. April 7.—Temperature, 101°; pulse, 106. A good deal of watery discharge coming through drain in fornix. Patient freely purged through the night. April 9.—Temperature, 101°; pulse, 120. Patient comfortable. April 20.—Patient improving. On bi-manual examination I found tenderness and fullness on right side. There was evidently some effusion round the seat of the injury.

From this time convalescence proceeded steadily, though slowly. The tenderness on the right side is gradually subsiding. On examination one month from date of operation the involution was complete, and the uterus normal in size.

The features worthy of note in the case are: The distance

from medical help, the delay after rupture of uterus, which, I take it, occurred at 7 A. M., when the pains stopped, and, again, the delay before operation; and, finally, the difficulty of watching the case through the critical period at such a distance. It shows how cases situated in pure country air, with clean surroundings and as good aseptic measures as can be carried out in a country farmhouse, can get on and recover.



Willis E. Ford, M. D. :

Some of the *surgical accidents of childbirth* are illustrated by the remarkable injuries which occurred to a parturient woman, whom I was asked to see. It was her first labor, and had dragged on for some three days. Early in the morning of the third day delivery could not be brought about, but towards noon, under chloroform, though the head was not in the lower strait, forceps were applied, and after serious attempts at delivery, there seemed to be a sudden giving away of the resistance, and the child was born. The hemorrhage was so terrific that the woman fainted after the birth of the placenta, and a hasty examination showed that she had been torn upwards, that the ramus of the pubis had been broken, and that the bladder and several knuckles of intestine were protruding. The vagina was packed as tight as possible with iodoform gauze; this pushed the viscera back, and at the same time arrested the hemorrhage. The woman was stout, weighing about 140 pounds. When seen by me she was very weak and white, with flickering pulse. Under chloroform the packing was carefully removed; it was found that the ramus of the pelvis was fractured 1 inch to the left of the symphysis, and that the bone surface was ragged and separated to the extent of 1 1-2 inches. From above the cleft of the vulva, at the left side just over the external ring, a tear extended downwards through the vagina. The bones were drawn together by stout catgut, and the wound was sutured from above downward into the vagina. It was then found that the urethra had been completely severed from its connections, except the bladder neck, and lay on the posterior vaginal wall; the bladder was intact. The urethra was stitched in position, and an extensive rent in the posterior wall of the vagina, which extended up to the cervix and almost through the sphincter, was sutured. The

left ileum was freely movable, suggesting a fracture at the ileo-sacral union.

Good nursing and free stimulation tided the patient over the first few days, and she had no peritonitis at any time; the bowels were moved naturally, and water was passed by the urethra.

On the fourth day she had a rise of temperature, and soon after urine began to discharge freely through the vagina; it was found that sloughing had taken place in the anterior wall of the bladder. Three weeks later a large abscess formed in the left thigh just below the gluteal fold; this was found to communicate with some diseased bone at the sacro-iliac joint. When the bladder sloughing had so far ceased as to permit a proper examination, the introduction of a vaginal speculum gave a perfect view of the posterior wall of the bladder and left ureteral opening. There was some necrosis of the pubic bone. A plastic operation was carried out for the repair of the bladder wall, but in two or three days it began to leak. After two further operations the fistula was reduced to a pin-hole opening at the junction of cervix and vagina, but the woman would not consent to a fourth operation. She was able to walk, and had perfect union at the site of the fracture. The bladder was only able to hold two or three ounces. Pelvic measurement showed the external conjugate to be 17 centimeters, as against 20 1-2 centimeters, showing the dystocia which made normal delivery well-nigh impossible. Three years later this woman bore another child with safety, though she sustained injuries which led to a further vesical fistula, otherwise she was perfectly well.

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Alfred Cuff, M. D.:

I will report a successful case of *operative treatment of puerperal pyemia*. Acute puerperal pyemia is almost always fatal, and the process advances so rapidly that the time for operation is often passed before the true nature of the condition has become evident. Although subacute pyemia is not so fatal, yet the mortality is considerable, as is shown by a series of cases described by Bumm, in which 19 out of 23 ended fatally. The success met with in cases of septic venous thrombosis occurring in other parts of the body when the septic foci had been

cut off from the general circulation led to a trial of similar methods in puerperal cases. In 1894 Freund twice carried out extirpation of the uterus with a simultaneous excision of as much of the affected veins as possible, but in both cases the patient died. Trendelenburg and Bumm also tried this method unsuccessfully. Trendelenburg then modified the operation, and in a first successful case tied and cut the right internal iliac vein. by an extra-peritoneal operation and tied the right ovarian vein. Four other cases treated successfully on similar lines have been recorded, and the author will add a sixth to the number.

In my case the patient was attended at her confinement on November 6, 1905, by a midwife; the child was large, but the perineum was not torn, and the placenta came away with ease, and was apparently entire. On November 8 a rigor occurred; on the 10th a doctor was called in, and found the temperature 108° F.; pulse 126, but there was no uterine tenderness nor foul discharge; a biniodide of mercury douche was given. On the following day the uterus was curetted, and a few small shreds of placenta removed. Antistreptococcic serum was given on five days, but without appreciable result. On November 21 the temperature was 105.6° F., and on this day a mass about the size of a fist became apparent in the right iliac region, and the mass was found on vaginal examination to be situated in the upper part of the broad ligament. On the 22d the patient was removed to the Infirmary.

The patient became worse rapidly, until on December 3 it was decided to operate. At the operation there was found in the right broad ligament a mass moderately firm in consistence, three fingerbreadths in thickness, and extending from the uterine to the pelvic wall. An incision over the mass revealed only a thick bundle of thrombosed veins. The incision was then extended, the peritoneum was reflected, and one ligature placed on the uterine side of the mass, a second further out towards the pelvic wall. The thrombosed ovarian vein was next seen rising out of the pelvis, and was ligatured about half an inch from its junction with the vena cava, the peritoneum having been previously incised and reflected; round this vein there was a considerable thickness of indurated edematous tissue. After the operation the patient's temperature was subnormal until December 5, when it rose to 100.2° , and after-

wards varied for some days, but finally became normal on December 17. The patient had been having frequent rigors before the operation, but none after it, although she seemed to have slight sweats for several days. She left the ward well and fairly strong, and reported herself in February, 1906, as being quite well. Her life was apparently saved by the operation.



George D. Nutt, M. D.:

Although purely a surgical subject, cases of *extra-uterine pregnancy* have come under my observation in which a spontaneous recovery has taken place, where the hemorrhage has been small and rupture has occurred in the early stages of conception. In one case of extra-uterine pregnancy in the third or fourth month, the child was expelled through the anus.

I am thoroughly convinced that mechanical changes in the tubes are the chief causes of extra-uterine pregnancy. In fact the majority of cases that have come under my observation have been those in which there was some previous disease of the tubes. Of course, we have cases which we cannot explain on that ground, but in which there must be some disease of the inner lining of the tube which interferes with the proper functional activity of the ovaries. The frequency of this disease has also impressed me, and I think it has always impressed the surgeon that it is much more frequent than we supposed before abdominal surgery came into prominence. My experience has been that from one to three per cent. of all the cases of abdominal surgery are extra-uterine pregnancy. They occur in all forms, from severe to mild, like appendicitis, and much depends upon the nature of the case in regard to the surgical procedure. In a case in which there is a large amount of blood, showing that rupture has occurred, it is necessary to perform immediate operation to save life. In other cases where there seems to be an early rupture followed by a clot formation into the Fallopian tube, it might be well to delay operation for a few days. We realize that the diagnosis in the majority of cases is easy, because we nearly always have the same preliminary symptoms before the cases come under our observation. Passing over monthly periods a few days, perhaps only two or three where a patient has been otherwise

regular in her menstrual periods, combined with pain or pelvic trouble is one of the most important diagnostic points to be considered in these cases.

I have had two cases of rupture which seemed to be in the broad ligament. Had they come under my observation before such an immense amount of blood had been lost the results might have been different, but the cases were too far gone. There is another class of cases in which the tendency seems to be for Nature to wall off this blood and keep it from being poured into the abdominal cavity. I had a case a few days ago in which the diagnosis was exceedingly difficult. The woman was nursing her child which was about thirteen months old. Her menstrual periods came on after six months and still continued; there was no intermission during this period that she could remember.

A distinct mass surrounded with fluid was found in the pelvic cavity. At first, I thought possibly a retroverted pregnant uterus caused the pain. After putting the patient under ether, the uterus was found pushed up. I opened the cul-de-sac and evacuated a large amount of blood and bloody clots; then in trying to see where it came from a mass was found in the right side, possibly as large as a small orange, which seemed to be in the vault of these adhesions. There was no communication with the abdominal cavity and the mass could not be removed from below. Doing a celiotomy, I found the right tube ruptured, and a clot of blood in the middle of the tube; also a small ovum.



A. H. Davy, M. D.:

Most men in general practice meet with obstetric cases in which, in subsequent pregnancies, they would like to bring about the *induction of premature labor*, and yet have a hesitation in doing so. I chiefly allude to difficult forceps cases in which craniotomy may have been necessary. The following plan I have found simple and effectual. The date—seventh or eighth month—having been settled for the induction, the patient should have an enema administered. After free purgation the external genitals are well cleansed, and a bougie inserted as usual into the os and passed upwards, care being taken not to rupture the membranes. This by itself often fails to induce labor. The

following procedure, in addition, makes it effectual. A large-sized Barnes bag, made aseptic and oiled with carbolic oil, should be inserted high up in the vagina. It should be distended fully with warm water by a Higginson's syringe, the tap of the bag turned so as to retain the water, and the syringe taken away. The presence of the bougie in the uterus and of the Barnes bag in the vagina set up in a few hours rhythmic uterine contractions. If the insertion of the bougie and bag is done at 11 A. M., the labor will probably be completed in the evening. Micturition will be necessary two or three times during the day. The nurse should be instructed to get the patient into a suitable position and allow the water in the Barnes bag to drain off, but on no account withdraw the bag. After micturition the nurse should again distend the Barnes bag with warm water. A capable nurse can carry out all this, and will summon the medical attendant in the evening, when the os will be found, on removing the Barnes bag, fully dilated. A natural delivery will then take place.

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F. C. Hammond, M. D.:

In pelvic surgery a desideratum is a *non-absorbable ligature*, and it should no longer be considered a sound surgical practice to tie masses of tissue with heavy non-absorbable silk, if catgut can be obtained.

If operators persist in using silk, then there are certain essentials which they must observe in order to reduce to a minimum the dangers of a non-absorbable ligature. Under such conditions finely braided silk only should be used, ligation of small masses of tissue must be insisted upon, and careful toilet of the peritoneum must be rigidly enforced. The improvement of technique, and limited use of drainage greatly lessens the liability of silk ligature infection.

A permanent sinus or fistula is a very distressing sequela of abdominal operations. If after an abdominal operation there be a persistent sinus, and silk has been used for ligatures, the chances are very strong that a knot of silk is at the bottom of the sinus. It may be possible to disengage the knot with a crochet hook, or the hook end of a Gross ear spoon. It is not safe to explore the sinus until several weeks after the original operation, because the walls of the sinus at first constitute only

the coats of the intestines, but in time a thick and firm tube is found which can be explored and scraped with safety.

Unabsorbable ligatures may be expelled months, and often years, after healing by first intention. In explanation of such occurrences we are asked to believe that the ligatures were infected at the time of operation, but that the infecting bacteria did not prevent sound union by first intention, and these bacteria after lying dormant for weeks, months, or even years, have suddenly broken out and caused ligatures to be shed. What undoubtedly occurs is that the ligature, uniting the soft tissues which are constantly changing position, soon cuts its way loose and lies relatively free. It then either becomes encapsulated, or shifts its position to a place of least disturbance and then becomes encapsulated. So far the process is an aseptic one, and it would remain so, but for the special affinity of bacteria for damaged tissues, i. e., the tissues surrounding the foreign body. The bacteria may come from the blood, or they may be the normal bacteria in contact with the tissue affected, as from the bowel.

From these various standpoints the non-absorbable ligature should be condemned. The ideal ligature and suture should consist of material capable of keeping the tissues in contact, sufficiently strong to enable the tissues to proliferate and effect a living union of the parts, and after this has been accomplished this material ought to become eliminated without disturbance of the parts. So then when the mission of ligature has been accomplished, it should no longer remain in the tissue, a useless dead material capable of producing irritation, but should permit itself to be speedily absorbed.

Since catgut can be rendered aseptic and absorbable, it is at the present time our ideal ligature and suture material, and is the only safe and rational way to avoid the untoward results of silk. Since using the absorbable material the mortality of abdominal operations has been much lessened, by making them more complete, requiring fewer supplementary operations than in former years.

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W. C. Schoenijahn, M. D.:

This report of an *obstetrical incident* is offered with a view to inviting the attention of others to a simple complication that

may occur. It illustrates again how little things forgotten may easily assume an importance that is serious.

Mrs. McK., thirty-four years of age, of rather stout build, was taken in the first stage of labor the morning of December 11, 1904. This was her fourth confinement, the first having been a forceps delivery, the second a marginal placenta previa, the third normal. In the evening, after suffering slight pains all day, she called her attendant. Examination showed the head presenting normally, though not engaged, partial dilation of cervix, and a pelvic canal apparently of normal dimensions. On the morning of the 12th the cervix was more dilated, but the head had not advanced in the slightest degree. The patient was still up and about, and in good condition. In the evening the membranes ruptured, the pains became typically violent, the cervix completely dilated, but as time passed it became evident that the head could not engage. Towards morning the condition of affairs justified an attempt to engage the head with the forceps. Conscientious effort for nearly an hour produced no results, so under profound anesthesia a podalic version was done, bringing down first one foot, and shortly afterwards the other. Delivery was easy until the hips were born. It was then seen that the cord was straddled, passing from the umbilicus between the thighs, and as subsequent development showed, around the neck of the fetus. The cord was pulsating normally. Attempts to draw down sufficient of the cord to pass a loop over the knee proved ineffectual, and with the slightest advance of the fetus the cord became more constricted. There was no alternative but the tying of the cord and as prompt a delivery as possible. This was done, and in the eagerness to secure a living child the mother's perineum was deliberately sacrificed. The size of the head, however, delayed delivery so long that the fetus was dead.

The question is not as to the probability of this individual infant's having survived a breech delivery without the complication under consideration: the mortality of the infant in breech and footling cases is variously estimated at from 10 to 30 per cent. The fact remains that the neglect on the writer's part to think of the possibility of the fetus' bestriding the cord, and while the hand was in the uterus to place the cord where it would be safe from such danger, destroyed whatever chance the child had of surviving.

In only one of the text-books at the writer's immediate disposal is any mention made of the occurrence of this condition. Doubtless the simplicity of the complication and the obvious possibility of its happening makes any broad consideration of it unnecessary. Hirst, in the American System of Obstetrics mentions it in a footnote. There he says: "It occasionally happens that the child bestrides the cord; if possible the cord should be drawn down and slipped over the posterior thigh. If this cannot be done, it should be tied in two places and cut between the ligatures, and the child delivered as soon as possible."

In this case the mother made an uneventful recovery.



G. E. Shoemaker, M. D.:

The treatment of *chronic hemorrhage of the uterus* will depend upon the diagnosis. I wish to emphasize the point that until the diagnosis is established no systematic treatment is admissible. In the doubt whether a given case will ultimately prove to be malignant as judged by obvious signs, it is not justifiable to give any medicine and await developments. The physician's duty is to secure a portion of the suspected tissue, if in the cervix by the use of a little cocaine and sharp scissors, if in the endometrium by the use of a curette so vigorously applied as to secure some of the underlying tissue, without which it may be impossible for the microscopist to give a positive opinion. The microscopist selected must be a good one, as the tissues are not always typical and much depends on the judgment and experience of the one who makes the diagnosis. Again the clinical opinion of a careful gynecologist is almost invariably correct in regard to the character of any malignant tissue which can be seen or touched, and too much reliance must not be placed on a single negative microscopical opinion unless the pathologist has had a satisfactory piece of tissue, well known to be a part of the growth in question. He must also be furnished with some salient points of clinical history without which an opinion cannot be given in doubtful cases. More than one microscopical study should be made. It is far better occasionally to remove early a really suspicious cervix or uterus than to err on the other side, provided a conscientious regard

for the welfare of the patient is held. The diagnosis of malignancy once made, in my judgment the part should be removed as early and as thoroughly as possible, and this should be preceded by cauterization of the diseased area if in the cervix. After recovery from hysterectomy the X-ray should be used upon the part for a series of weeks by a competent and experienced hand.

Into details of operative treatment in general I need not go. Suffice it to say that every effort must be made to preserve the integrity of function and to preserve organs if possible.



Paul A. Adams, M. D.:

Last spring we made a study of the *cases of induced labor* which had occurred at the Sloane Maternity Hospital during the last few years and the following facts were brought to light:

A. As to causes for the operation:

Deformed pelvis, 50 cases as follows: (Justominoir, 22; flat, 19; kyphotic, 5; obliquely contracted, 4). Eclampsia, 29; albuminuria and threatened eclampsia, 28; accidental hemorrhage, 8; melancholia, 7; chronic endocarditis, 5; pulmonary tuberculosis, 5; dyspnea, 4; previous high forceps with one symphyseotomy, 3; persistent vomiting, 3; previous stillborn children with slightly justominoir pelvis, 3; previous instrumental labor with large child, 3; overtime with large child, 3; overtime with rigid cervix, 1; asthenia and general weakness of mother, 2; hysteria, 2; prolapsus uteri, 1; placenta previa with one transverse presentation, 3; extreme youth (13 years), 1; edema, of lungs, 1; ruptured membranes, 1; hemiplegia with obliquely contracted pelvis, 1; ovarian cyst, 1; dead child, 1.

B. The methods of procedure adopted in these cases may be summed up as follows:

1. Dilatation of the cervix in 107 cases of which twelve were cases of accouchment forcé. Dilatation was accomplished by using Voorhees bag in 49 cases, and manual dilatation, which in some cases was combined with the use of Goodell's or other dilators, in 58 cases.

2. Bougie (Krause's) method, 46 cases. This was in some cases combined with No. 1.

(These two are the favorite methods now in use at Sloane.)

3. Rupture of membranes (Sheele's method), 10.
4. Tampon of cervix, 4.
5. Tampon of vagina, 3.
6. Puncture of labia was performed in one case because of extreme edema of abdominal wall, vulva, thighs, etc.
7. Various combinations of the above have at times been used.

The following general rules now apply to the Sloane cases:

1. Patients all receive lysol douche for lubricating and cleansing effect before the introduction of bags or bougie.
2. In the bag cases at the end of six hours an attempt is made to pull the balloon through the cervix.
3. If the patient is having strong labor pains nothing more may need to be done. If, however it is considered best, the next size bag or a bougie may be introduced.

♦ ♦

J. H. Bodine, M. D.:

I believe for *local anesthesia in general surgery* two-thirds of a grain of cocain to be a perfectly safe dose for an adult. One grain of cocain is dissolved in an ounce of sterile salt solution, making a strength practically of 1 to 500. This solution is used to infiltrate the skin along the line of incision and also to cocainize the nerve trunks when found. For all subdermic infiltration a solution of 1 to 1000 is used. This second dilution is made in the syringe by drawing it half full of the stock solution and half full of a physiological salt solution. We have experimented with solutions stronger and found them unnecessary, while weaker solutions do not produce perfect anesthesia. When properly infiltrated a solution of this strength will completely anesthetize the skin for one hour and a half. It should be made fresh for each operation, as cocain solution rapidly develops a fungus. In a few hours it is potentially septic and in a few days will produce suppuration. Lack of this knowledge has caused the belief that cocain wounds do not heal well. It is conceivable that a solution of pure water might interfere with healing by swelling the tissues by inhibition, but when the law of osmosis is observed and physiological salt solution is used, thus making it isotonic with the blood serum, it cannot interfere with the healing of the wound.

Cocain solution may be boiled long enough for sterilization without detriment to its anesthetic value, but if boiled too long the drug is decomposed and becomes dangerous, therefore we have had the Parke, Davis Co. manufacture for us sterile crystalline cocain, plus sufficient sodium chloride, inclosed in a sealed tube, to make 1 to 500 solution when dissolved in an ounce of boiled water.

We have not used the solution advised by Schleich because the one mentioned is simpler and entirely satisfactory. A warm solution is more effective than a cold one.

A personal calmative demeanor in the surgeon accomplishes much in quieting the nervous apprehension in the patient. A nervous, jerky surgeon will produce a correspondingly nervous, jerky patient. The position assumed by the patient on the table is important and should be one of comfort and relaxation. For instance, if the arms are crossed above the head the patient will be "fidgety" before completion of the operation from the tiresome position. To a nervous patient the click-click of the dissecting scissors may become unbearable. If at the beginning of the operation, when everything is ready, the surgeon asks in a pompous manner for a "knife," the patient's courage instantly vanishes. The word "bistoury" obtains the desired instrument and does not shock the patient; better still an assistant who hands without asking. Even the initial prick of the needle must be explained. If after assuring the patient you suddenly and unexpectedly jab him with the needle the subsequent argument that no man can call that real pain will serve only to convince him that your idea of pain and his do not agree. Observing the total sum of these little points makes big surgery under local anesthesia possible and painless.

The depth to which the needle is plunged in the skin is important. The highly differentiated end-organs of the sensory nerves are superficial. When the needle point lies true it can be seen through the skin. The greatest difficulty in these operations under local anesthesia is encountered in the very beginning. Pain results whenever a surface blood vessel is divided, and this is multiplied by each grasp of artery clamps and ligature. These repeated twinges occur at the very beginning of the operation, and there is a wide difference between pain at the beginning and pain at the end of an operation.

One destroys the patient's confidence in promised immunity, the other is borne with equanimity because the termination is at hand. As the subcutaneous fat contains many terminal nerve filaments it is best to edematize this tissue with a Matas massive infiltration before the skin incision. Fat cannot be infiltrated after the skin is incised. A solution of 1 to 10,000 cocain is sufficiently strong for this purpose.

I am satisfied that if the newer methods of using local anesthesia are studied by the general surgeon of to-day at least from 25 to 35 per cent, of operations now being done under general narcosis can be done painlessly and consequently safer under cocain anesthesia.

♦ ♦

J. J. Davis, M. D.:

I will report a case of *hematoma of the vulva following normal delivery*, in a primipara, aged nineteen, whom I saw twenty-four hours after her delivery by a midwife. The labor had been normal, and the child full-term; the patient had sustained a slight laceration of the perineum. Evidences of acute anemia were present, and a tumor the size of a full-term fetal head was found in the left labium and surrounding region. It was tense, dark in color, and the tissues round it were edematous. It measured 19 cm. by 9 cm., and extended up alongside the vaginal wall, partially closing the vaginal opening. About six hours after delivery a moderate but continuous hemorrhage and a small swelling of the left labium was noticed; this was arrested by packing the vagina, but recurred profusely some hours later, and it became necessary to pack the vagina tightly; bleeding was finally arrested after a considerable loss of blood. The swelling in the labium progressed until it reached the size indicated above. She was admitted to hospital with a temperature of 100° F. and a pulse of 80. Under a general anesthetic the tumor was incised, and 1 1-2 liters of black clot was turned out; the cavity was irrigated and packed. An opening 1 1-2 cm. long was found in the vaginal wall leading into the cavity. Recovery was uninterrupted, the cavity closing by granulation, and the blood count showing an improvement, the patient was soon able to leave the hospital.

Translations.

Abdominal Hysterectomy for Cancer of the Cervix Uteri.

—Lapointe (La Clin.) finds that results from vaginal hysterectomy for cancer leave much to be desired; he attributes this to an operation which does not remove, with the tumor, all the lymphatics and tissues involved. He recommends Wertheim's operation, which aims at the removal of the uterus, the adjacent cellular tissues and broad ligaments, coupled with systematic extirpation of the lumbar and pelvic glands. Discussing Wertheim's operation, he advises that the cervix should be prepared before the operation is begun, by destroying the surface of the cancer with the thermo-cautery. The Trendelenburg position is adopted, and the incision is made in the umbilical-pubic line. The uterus is seized and drawn up, either by forceps or by passing two strong ligatures through it, the appendages and round ligaments are ligatured and divided, the vesico-uterine peritoneum is incised and peeled off as far down as possible with the aid of curved scissors.

At this point the operation of hysterectomy for cancer begins to differ from hysterectomy for fibroma, for the fundamental principle in abdominal hysterectomy is to divide at a distance from the cervix, and to remove the uterus and parametrium when possible in one single mass.

To do this it is necessary to isolate and preserve the ureter. It lies behind the broad ligament of the postero-lateral margin of the pelvic brim; in the process of dissecting it out the finger hooks round the uterine vessels where they cross it. They should be ligatured and divided as near their origin as possible, and the dissection of the ureter is then carried down to the bladder.

In advanced cases the ureter is so involved in the cancerous mass that it is not possible to set it free, and it must either be resected and a uretero-cysto-neostomy be performed or the kidney must be removed or the operation abandoned; this is, however, rarely necessary.

The next step is to draw the uterus upwards and forwards and to sever the sacro-uterine ligament and the peritoneum of Douglas's pouch. With the fingers all the adjacent cellular tissue behind and round the mass is detached down to the pelvic floor, the uterus is then only attached to the vagina, which it is required to divide some distance below the cervix; this is done with great care to prevent cancerous debris or secretions from infecting the peritoneum and exposed cellular spaces. To avoid this danger two methods have been employed, in one the uterus is pushed down into the vagina, the peritoneum is

sewn together above it, and the final removal is made through the vagina. The other is practiced by Wertheim: the vagina is cleaned and dried from below, the wall is then seized between clamps placed on either side and as low as possible of the cervix, and divided; finally, if any hypertrophied glands are felt, they are removed. A vaginal drain is inserted and the abdomen is closed. It is particularly necessary to stop all hemorrhage and oozing before closing, as a precaution against sepsis.

Garrulitas Vulvæ.—W. Schuelein believes that perhaps comparatively few medical men have heard of the condition which was described by Loehlein in 1879 as *garrulitas vulvæ* (Deut. med. Woch.). The term was introduced to differentiate the condition from that of a recto-vaginal fistula. Air is pressed out of the vagina with a more or less audible noise. The first question which the author sets himself to answer is whether the gas expressed is atmospheric air or whether the gas is developed in the vagina from micro-organisms. The latter theory has been suggested for some cases, but no explanation has been forthcoming as to how the micro-organisms can develop sufficient gas to produce a loud noise. Schuelein has seen several cases, and describes two which permit of the decision of this question, and further throw light on the development of the garrulity. In one case the vaginal noises started after the first confinement, and increased during the course of three years. The patient complained of irregular hemorrhages, white discharge, and nervousness as well.

On examination, the introitus was found to be large and lax, and there was a moderate degree of prolapse of both anterior and posterior walls of the vagina. The perineum was intact. In addition, he found endometritis and an erosion on the cervix. The hemorrhages, etc., were easily controlled by baths, diet, and astringent douches, and the general condition of the patient was greatly improved, but the air still made a noisy exit from the vagina. Later she again became pregnant, and during the latter months of the pregnancy the garrulity ceased, to return again after the delivery.

He was able to convince the patient that the condition was not serious, and in this way quieted her mind to a certain extent. Getting the patient to lie on her back with her knees drawn up and her arms placed above her head, he found by introducing the finger into the vagina, that the vagina filled with air on taking a deep inspiration. The same result was noted when she was placed in the knee-elbow position. This could be repeated as often as he liked, and on expiration, a loud noise was produced by the air passing through the vulva. Had it been due to gases developed in the vagina, the repetitions within a short time would have been impossible. In a second case the same signs were made out. The noises were

so loud that the patient found it impossible to enjoy the society of anybody, and she became so much affected by it that she threatened to commit suicide.

All ordinary treatment (irrigation with astringent solutions, etc.) failed to relieve, and it was therefore decided to perform colpoperineorrhaphy. This had the desired result; and although a little air entered and left the vagina still, it did so without an audible sound. The vulva was so narrow after the operation that it only just admitted two fingers. Schuelein considers that garrulitas vulvæ is produced by a laxness of the vaginal walls, and especially of the posterior wall, and also of the abdominal walls. The perineum may be intact, but often it has been ruptured at a previous confinement, and only the superficial tissues have been repaired. The condition is much more common in multiparæ than in nulliparæ. It is not so uncommon as one usually believes, only the majority do not like to complain of the symptom to their doctor. It is more common among the poorer classes than among the more wealthy. The apparent increase in the number of cases may be in part due to the new-fashioned reform dress, which admits of slackness of the abdominal walls.

The Dietetic Treatment of the Vomiting of Pregnancy.—Kolinski (St. Petersburg Clin. Med.) deals with the diagnosis and propriety of treating the vomiting of pregnancy. He considers such should be deemed pernicious if it caused loss of strength and prevented the patient leaving her bed. He had carefully studied the subject, and was led to discard the treatment hitherto adopted, and to treat the disorder by dieting with substances which, by their density and weight, would prevent their being ejected from the stomach. He found ham or bacon were the best foods. A woman who for weeks had suffered from intense vomiting, and was too weak to leave her bed, whose appearance caused alarm after varied unsuccessful treatment, would find, after a breakfast of fried ham or bacon, that emesis did not occur, and great improvement in her condition by partaking of other solids, and in a few days sleep and strength would return. The factors of such treatment would be the stable condition or tone given the distressed stomach, acting like ballast to a vessel in troubled waters. The new confidence and assurance given the patient that her malady was curable would be helpful co-operation. The full diet he advises would be corn bread, cocoa or chocolate, with pork in some form or other for breakfast. At other meals, beefsteak, corned or roast beef, rice, potatoes, spinach, cauliflower, turnips, etc. Also fish, game, fowls, and cheese were suitable. Of unsuitable foods which induced vomiting were water if taken freely; milk, tea, coffee, soups, and fluids in general. A most un-

suitable diet was a combination of toast, eggs, and sweetened tea.

Splenocleisis.—B. Schiassi (*Riv. Crit. di Clin. Med.*) describes a case of splenic anemia cured by operation. The patient, a woman of thirty-six, had never enjoyed good health, and had lived a hard life. On admission to the hospital, she was fairly well nourished, but very anemic; the spleen measured 32 by 18 cm.; the blood count showed red cells 3 1-4 millions, hemoglobin 27 per cent., white cells 1300. After spending two months in the hospital, the patient felt worse and weaker; the hemoglobin had fallen to 24 per cent., the white cell count stood at 1900.

The operation of splenocleisis was then performed under morphine and CHCl_3 . An oblique incision was made into the abdominal cavity two fingerbreadths below the left costal margin, and the spleen was exposed; it was then enveloped in five folds of gauze, the ends of which were brought out at the upper and lower extremities of the wound, and the exposed surfaces of the spleen were all scraped over with a sharp spoon so as to remove the endothelial covering. The incision was closed with silk and catgut stitches. A strip of gauze was removed on each day, from the fifth to the ninth after the operation.

The patient's general condition improved steadily after this. Six months later the blood count showed 5 1-4 million red cells, 6200 white cells, and hemoglobin 92 per cent. The spleen was smaller, half its previous size. Schiassi understands splenic anemia to be a disease characterized by a slowly progressive anemia preceded and accompanied by increase in the size of the spleen; there is no leucocytosis and no enlargement of the lymphatic glands. He holds that Banti's disease begins by enlargement of the spleen, which is followed by an intermittent but progressive anemia, and ends with hepatic cirrhosis and ascites; the lymphatic glands are not usually enlarged. He gives clinical details of two cases of Banti's disease, both with marked anemia and leucopenia.

Aseptic Catgut.—Kerewski reports (*Berl. klin. Woch.*) the results of investigations which he has carried out on the subject of aseptic catgut. He finds that all the methods adopted up to the present fail to give completely satisfactory results, and therefore he has attempted to find a new method which will lead to the introduction of a permanently sterile, aseptic catgut, which is ready for use. He considered that such a catgut should be sterilized without the use of antiseptics, should not contain any chemical substances which might transude into the tissues and harm them, should be firm and elastic, and should be put up in such a way that its fitness for use does not

deteriorate with time. In order to insure the last-named point, he found it necessary to make a special glass tube. The tube, which he describes in detail, allows of the introduction and twisting of the gut, without it being touched by hand. The tube narrows above to a thin neck, above which it has a small bulb, and again constricts. The end of the gut is knotted several times, and the knots are allowed to drop back as far as the bulb. The sterilization cost him much more difficulty than the tube did. At last he found that the vapor of water-containing alcohol was capable of absolutely sterilizing the catgut after about eight minutes. He therefore places the tubes containing the rolled-up catgut in a wire basket, which is of the same circumference as the alcohol vessel. The latter is made of copper and contains sufficient 70 per cent. alcohol to supply all the tubes, and the whole apparatus is then covered hermetically in with a hood, containing the tube for the cooler and a thermometer. The alcohol is then heated up to about 79° C. and kept at this temperature for twenty-five minutes. The tubes are then sealed up below, and then from 1 to 3 per cent. of glycerine and absolute alcohol is filled into a cup from above. The upper end is then sealed up and lastly the sealed tubes are again heated for one hour to 103° C. Catgut prepared in this way is absolutely sterile and reliable. He has tried the method with infected material and has subjected it to a number of severe tests and finds that the process is satisfactory. He details his test experiments: Lastly he describes a special apparatus which he has devised to keep opened tubes in without risking infection. He claims that catgut prepared in this way is about half the price of ordinary sterilized catgut in the market. He has intrusted the details of his procedure to a certain firm and Dr. L. Michaelis has consented to control the bacteriological aspect of the gut permanently.

Embryotomy in the Living Fetus.—Budin (*Progrès Médical*) lecturing at the Clinique Tarnier, deals with the subject of embryotomy in the case of a living fetus. Taking for his text a case treated in the clinic in January last, in which repeated application of the forceps failed to deliver, and the patient's condition was such as to contraindicate Cæsarean section or symphysiotomy; he cites various authorities as justification of his having had recourse to cephalotripsy, although the fetal heart-sounds were still audible. It is true that Professor Pinard denounced the practice in unmeasured terms. Moureau and Lavrand supported the teaching of Pinard, but Thoyer-Rozat, of Toulouse, joined issue with them in the pages of the *Presse Médicale*, in 1902. Professor Charles, of Liège, during a discussion at a meeting of the French Obstetrical Society in 1899, openly defied the theological decree against the practice,

and justified himself by pointing out how frequently a waiting policy resulted in the death of both mother and child. He characterized as jesuitical the conduct of those obstetricians who make a pretense of auscultating and hearing nothing, while congratulating them upon acting on the same lines as himself. On the same occasion, Fochier of Lyons described himself as holding a brief for the mother as against the unconscious child to whom those holding the opposite view would sacrifice her; he protested against operating on the mother without laying the full risks before her and obtaining her willing consent; and he explained his procedure on the ground of doing to others as he would that others should do to him. An overwhelming majority of obstetricians held the same view, Porak pointing out the rarity of the conditions requiring such a painful decision—only once in more than 15,000 deliveries. The danger of laparotomy in cases where sepsis might be feared was dwelt upon by Budin; and also the frequency with which in such cases the child succumbed either at once or within a few days. He pointed out the advantage of diagnosing pelvic contraction in time to induce premature labor; and finished by exhorting his students to ask their own consciences what they would do if the patient were their own wife, sister, or daughter.

Fatalities in Pregnancy and Puerperium Associated with Pyelonephritis.—Kaumaun (Monats. f. Geb. u. Gyn.) considers that Opitz's mortality tables of cases of pyelonephritis in pregnancy and childbed make out the complication to be less grave than the experience of others would prove. Opitz's mortality was 1 in 69, the fatal case dying after nephrotomy. Kamaun has observed cases in a Breslau hospital, where suppurating kidneys were the cause of death. (1) A woman aged twenty-four, fell ill in the fourth month of her sixth pregnancy and died after uremic symptoms within nine days. There was parenchymatous nephritis with pyelitis of both kidneys and cystitis. (2) A primipara, aged eighteen, was seized, in the sixth month, with pyemic symptoms, dying within seven weeks. The bladder and ureters were inflamed, pyelonephritis of both kidney and dilatation of the right ureter and pelvis existed. (3) A woman, aged thirty-one, suffered from retroflexion of the uterus in the twelfth week of her fifth pregnancy. In this case pyelitis was a result of the complication. Gangrenous cystitis, right ureteritis, pyelitis, abscess in the kidneys and peritonitis developed, with a fatal ending. (4) A girl, aged eighteen, was delivered of her first child spontaneously, the peritoneum was ruptured and the injury at once repaired. Symptoms resembling puerperal sepsis developed and proved fatal within eight weeks. As in the other cases there was

cystitis, with pyelitis. Both ureters were inflamed, the kidneys were suppurating and patches of broncho-pneumonia were detected in the lower lobes of both lungs.

Measles in Puerperium: Uterus Didelphys: Death.—Rudaux (*Comptes Rendus de la Soc. d'Obstét. de Gyn. et de Pédiat. de Paris*) relates that a seamstress, aged twenty-nine, suffering from measles, was sent into the Maternité of the Beaujon Hospital, being in labor at term. It was her first pregnancy. The temperature was above 104° , the uterus firmly contracted, and the os fully dilated. Labor seems to have been in progress for several days, and the membranes had ruptured early. There was very fetid discharge. The occiput presented in the first position. Basiotripsy was performed, and a slightly macerated fetus, weighing 5 3-4 pounds, delivered without trouble. Then a body was detected in the left flank, smaller than the empty uterus, and separated from it by a deep notch. On further examination it was seen that two vaginae existed: that on the left was connected with the body in the left flank, which was a distinct uterus with a fully developed cervix. This left uterus was of the size of a normal uterus in the middle of the second month. The placenta followed the child at an interval of an hour, and weighed over 12 ounces; it came away entire. The patient died two days later, and then it was found that the uterus didelphys existed. As usual, there was a deep fold of peritoneum between the uteri.

Hydrometra in an Aged Subject.—Mond (*Zentralbl. f. Gynäk.*) applied the name "hydrometra" to a cystic papilloma of the uterine wall in a robust woman seventy-one years of age. She declared that she was free from any swelling or discomfort till eight weeks before she consulted Mond. Then attacks of dysuria occurred. Mond found that the bladder was extremely distended. After he had emptied it a tense tumor could be defined reaching from the pelvis to the umbilicus. It closely resembled an ovarian cyst. When the abdomen was opened the tumor was seen to be the uterus enlarged to the size of a man's head. Supravaginal hysterectomy was performed, and as the knife passed through the cervix a great quantity of gelatinous fluid escaped. The uterus was examined; a cystic tumor bearing papillomatous growths was discovered. It apparently had developed in the uterine cavity, but as it had attained large proportions its original seat was not clearly definable. Lomer, in discussing Mond's case, noted two cases where "ischuria paradoxa"—unaccountable distention of the bladder—occurred in association with uterine fibroid, but it is more frequent after operations, when it usually develops insidiously.

Hemorrhage due to the Low Situation of the Placenta.—Rudaux (La Clinique) asserts that hemorrhage during pregnancy or on parturition is often caused by the placental site being in the lower part of the uterus; as the placental attachment may be to any portion of the wall in the lower third of the uterus, it is not necessarily placenta previa. The characteristic of such hemorrhage is that it is either copious, recurring, or continuous, and occurs during pregnancy; or complicates delivery and the post-partum period. It is only by personal observation and careful examination of the patient, noting pulse and general condition, that one can find the amount lost in ante-partum hemorrhage. The treatment advocated by Rudaux is to place the patient in bed, keeping the head low, and douche with several pints of very hot water until the fluid returns free from blood-stains, and keep her in bed several hours after the bleeding has stopped.

If the surgeon cannot obtain the desired result by these means, or if when first seen, the patient's general condition is serious, it is best, using necessary precaution, to rupture the membranes. This is usually a simple matter with multiparæ, who have a patulous cervix, and where the placenta is seldom found to lie in front of the orifice. Antiseptic injections should be administered every few hours, and a pad kept *in situ* over the vulva. As the bleeding may recur, it is advisable to watch for at least an hour, and on leaving to note that the nurse has a good supply of gauze, lint, wool, saline solution, and necessary antiseptics, with instructions to send for assistance, and have a good supply of boiling water ready should hemorrhage recur. Where the bleeding is frequent, or with continuous slight losses, order the patient to rest in bed, and a hot douche night and morning. If pulse-rate is less than 100, let pregnancy continue, but should it rise, with signs of anæmia and attacks of syncope, the membranes should be ruptured to induce labor. Hypodermic injections of saline solution are to be given, and continue antiseptic douches every four hours, maintaining a pad over the vulva. Should the fetus be dead, or bleeding continue, a dilating bag should be used to accelerate parturition; rupturing the membranes or using a very hot douche will in most cases check the hemorrhage, being careful to correct the position, if a transverse one, prior to so doing.

When necessary, labor may be terminated by the use of the dilating bag, gauze tampons, or manipulation; performing version and rapidly delivering the fetus. If syncope threatens, give saline injections. If the os is fully dilated, and it is then necessary to obtain rapid delivery, or in case of a dead fetus, forceps or the cephalotribe may be used. To prevent collapse, which may be caused by the serious hemorrhage so frequently set up by extracting a fetus, hot douches should be given; if not effective, extract placenta by the hand, and give intra-

uterine injections. Have the patient watched for several hours, give hot vaginal or intra-cervical douches, with massage of the abdomen should the uterus relax; and as its lower segment does not contract freely, to prevent bleeding as much as possible it may be found advisable to plug the cervix with gauze tampons.

In addition to keeping the patient in a recumbent position, other beneficial methods that may be adopted are the use of hot-water bottles, ether injections, salt solution injected subcutaneously, brandy and hot water in spoonfuls. Where syncope threatens, oxygen may be advantageously inhaled.

The Menstrual Function and Mental Diseases.—A. Salerni (Il Policlin.) discusses the facts connecting menstruation and menstrual disorders with the onset and course of mental diseases. The frequency of menstrual disorder in patients of unsound mind is recorded by numerous authors, and considerable discussion as to the relation in point of time between the onset of one disorder and that of the other shows that the usual course is for both to begin at about the same time. The menstrual irregularity usually persists at least as long as the accompanying psychopathy, and when menstruation becomes regular and normal before the mental functions are restored the prognosis as to restitution of mental health is bad. The author's own observations tend to show that psychopathic disorders of menstruation very seldom take the form of pain, and seldom that of amenorrhea, but consist usually of some kind of irregularity, especially in the time of onset. On the other hand, menstruation usually determines an exacerbation of symptoms in the mentally unsound. These exacerbations are usually pre-menstrual or post-menstrual, but in the periodic insanities and in mental disease connected with arrested development the exacerbations are coincident with the onset of menstruation. Aggravation of mental symptoms at the beginning of the period usually lasts throughout it, or even into the next interval, but pre-menstrual exacerbations usually reach their height the day before menstruation begins, and cease when the flow is established.

Taking the different forms of mental disease in order, Salerni states that in the periodic psychoses a connection between mental and menstrual conditions is common but not invariable, and numerous authorities are quoted. He himself considers menstrual psychoses, properly so-called, include only those recurring rhythmically with the monthly period. In such cases hereditary predisposition is almost constant.

The diagnosis rests on the following points: Neuropathic constitution of the patient, onset of the disease at the time of puberty, variable duration of the paroxysms, and either per-

fectly lucid intervals, or intervals marked only by slight psychical depression. The prognosis is doubtful; the result usually favorable. The clinical manifestations of hysteria are under the influence of functional dynamic disturbances of the nervous system, of which menstruation is a consequence only. In chronic psychoses the author suggests that some prognostic use may be made of the fact that periodic oscillations of temperature, pulse, and respiration occur in primary chronic amenorrhea, showing that the menstrual flow is only one part of menstruation. The relation between psychopathy and menstrual disorder is especially well seen in the psychoses of intoxication, infection, and exhaustion, because both are effects of the same cause, as, for example, anemia, alcoholism, or pellagra. By some authors a function of elimination has been ascribed to metrorrhagia, because the free loss of blood may appear to cause a lucid interval. Chronic psychoses are only slightly influenced by menstruation, and have little apparent effect on it. In conditions of arrested development the regularity of menstruation is in relation to the extent of development.

Perineal Hernia Simulated by Pelvic Tumor.—Prochownik (*Zentralbl. f. Gynäk.*) recently exhibited before a German society a woman, aged thirty-seven, from whom, one month previously, he had removed a tumor of the size of a man's head, developed between the left labium and the skin of the thigh adjacent to it. Before its extirpation it could be reduced on gentle pressure, going up entirely into the pelvis, without pushing down the rectal wall. After reduction a kind of neck of a hernial sac could be felt, admitting four fingers. On withdrawing the fingers the whole mass came down again; it was absolutely dull on percussion, and this fact contraindicated perineal hernia. On opening the abdominal cavity, the upper limits of a tumor were found to lie between the uterus and the bladder; it was punctured, and a clear, serous, highly albuminous fluid came away. The abdominal incision was closed, and then the tumor was removed through a perineal wound; the contents proved that it was not a diverticulum of the bladder. It was made up of numerous small cysts, and reached high up in the pararectal tissue. The bowel was opened in two places during the enucleation, and the injuries necessitated two secondary operations for closure of the wounds. The tumor was an extra-peritoneal fibro-cystic growth developed in the submucous tissue of the rectum. Lomer asked Prochownik when the patient's last pregnancy had occurred and if a vesicular mole had been passed, as the tumor resembled lutein-cyst growths such as are known to develop in association with vesicular moles and syncytioma. Prochownik replied that the last pregnancy, two years before the operation, was normal.

THE JOURNAL OF SURGERY GYNECOLOGY AND OBSTETRICS.

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PELVIMETRY.*

BY GILBERT FITZ-PATRICK, M. D.,

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As the mechanism of labor is the grand climax in the tragedy of birth, it must be apparent how essential a scientific knowledge of the pelvis is to the life of the actors.

The fate of the woman and child intrusted to his care is intimately linked with the physician's thorough understanding of the relation of the passenger to the passage, for the foundation of obstetrics lies in a distinct knowledge of the anatomy of the pelvis.

Heinrich Deventer, in 1701, was the first obstetrician to make a thorough study of the anatomy of the pelvis, yet it was Smillie, the great English authority, who in 1752 published a most accurate description of the pelvis, with its various measurements, and introduced the method for estimating the antero-posterior diameter which is used to-day, although Baudelocque, in 1775, was the first to describe the external conjugata, and used the calipers for measuring the distance

* Read before Obstetrical Society, American Institute of Homeopathy, September 11 to 15, 1906, Atlantic City, N. J.

between certain bony points. To Levret, Stein, Nägeli, Luschka, Michaelis, Lipmann, and Hodge of America and many others must much credit be given for our present-day knowledge of the pelvis, with its inclination, planes, and diameters.

The pelvis presents as many variations in shape as does the skull. This is due partly from the fact that it is developed from a considerable number of bones, and partly to the varying mechanical and developmental influences, to which it is subjected during the early years of life. Indeed, we may say that no two pelvises are exactly alike, and that perfectly normal pelvises are rarely seen, so that an accurate conception of the form and dimensions of what may be termed the normal type can be obtained only from averages based upon the examination of numerous approximately normal pelvises.

Owing to the greater employment of the right side of the body, the corresponding side of the pelvis is more developed than the left. Individual variations may be observed in the form, consistency, and general character of the pelvic bones; in the angles which the iliac fossæ form with the walls of the pelvic brim; in the shape of the sacrum, and particularly in that of the cavity itself. In view, therefore, of the varying thickness of the pelvic bone, and especially of the degree of flaring of the ilia, accurate conclusions cannot be based upon external pelvimetry, but with the object of gaining a general idea of the shape and configuration of the pelvis, it should be followed out in every case, especially in primiparæ and in multiparæ who give a history of difficult or operative delivery. With these facts in hand, a necessity for a practical variety of internal pelvimetry is quite obvious.

The Year Book presents a new pelvimeter for measuring the conjugata vera directly, designed by Solowij. It is a scissor-shaped affair, with two blades formed so that when it is introduced the tips rest one on the promontory and the other on the inner upper border of the symphysis. The scale is attached near the ends of the handle. The particular points of advantage in this new pelvimeter are:

1. Direct measurement of the conjugata vera.
2. Ease of application.
3. No need of an assistant.

4. No need of an anesthetic, which is necessary when making internal measurements in some cases.

5. Applicability in all cases.

The idea is not new; it is simply applying the idea in a handy, convenient, and less complicated manner. It is important to determine the narrowest diameter of the true pelvis, which Gaszunski calls the *conjugata minima*, though it may not be the *conjugata vera*. In estimating the true *conjugata* through the diagonal measurement, it is very important to know the upper and lower angles of the symphysis, or rather the height of the promontory.

Gaszunski claims in the average case, when estimating the true conjugate by this method, a deduction of one and one-half centimeters from the *conjugata diagonalis* is more correct than the deduction of two centimeters.

Ehnfest claims that both obstetricians and general practitioners fail to measure the pelvis in the vast majority of cases, which we all know is quite true. Most writers and teachers make unjustifiable and exaggerated claims of the utility and accuracy of the various methods of pelvimetry, when as a matter of fact it is impossible to measure accurately any of the internal important diameters. The external diameter of Baudelocque had decreased in value by test examinations, until at the present time, has been said, but little reliance can be placed upon it. De Lee claims the principles enunciated by its originator are absolutely erroneous. There is no known method that will enable the examiner to determine the exact length to be subtracted from the Baudelocque in order to obtain the *conjugata vera* in an individual case.

The method of estimating the true *conjugata* from the diagonal *conjugata*, which is done by introducing the first two fingers into the pelvis, as first suggested by Smeillie, is faulty. If the perineum is normal it is impossible to touch the sacral promontory with the middle finger, providing the hand and pelvis are normal. This can only be done in contracted pelves, where, of course, it is most needed.

In normally shaped pelves it is necessary to deduct from fifteen to eighteen millimeters from the *diagonalis* to obtain the true *conjugata*, whereas in contracted pelves this deduction varies from zero to thirty millimeters, according to the incli-

nation of the pelvis, the width and thickness of the symphysis pubis, and also the skill and experience of the examiner.

The approximate length of true conjugata can, therefore, only be estimated by this method. Again, the values of the knowledge of the approximate length of the true conjugata is somewhat nullified because it is yet impossible to accurately measure the fetal head or determine to what degree the fetal head is able to accommodate itself to the pelvic canal by molding. The facts remain the same, however; even though we have an accurate knowledge of the length of the conjugata vera; yet how many times have we seen the parturient suffering from prolonged labor, all because the accoucheur failed to perform a practical pelvimetry or properly estimate the proper relation of the passenger to the passage.

100 State Street.



PUERPERAL ECLAMPSIA.

BY FRANK L. NEWTON, M. D., BOSTON, MASS.

In presenting a paper on a subject of which so little that is positive is known, and of which the prevalent opinions are so well known, I am constrained to suggest that some two years ago I consented to write on this subject, thinking I knew something to advise and a theory to advance that might be worth consideration. I have since appreciated my mistake, and for which, I am now repenting. Two years is a long time for improvement, and in surgery, hygiene, and sanitary science rapid strides have been made; also, in serotherapy much has been accomplished. But concerning malignant diseases, physiological functions, and drug therapy, there has been added little that is new, and in the lack of this the subject now considered has shared.

With so little of positive knowledge regarding the etiology and pathology of this complication, and after so many unsuccessful attempts at trying to prove the many theories, and with such wide diversity of opinions among those most learned in the science of medicine, who have studied the subject most carefully, there is perhaps no demand for an apology.

Seemingly, the body as a whole and in its integral parts has been subjected to most thorough investigation and research; every avenue traversed, each organ individually and collectively has been dissected and in turn held responsible, but one by one discharged, though somewhat reluctantly, with a verdict of "not guilty"—the kidney, the liver, and the thyroid gland possibly being the longest held pending trial.

The would-be mother has been brought under the accusation of being responsible because of her whims and caprice in gratifying unnatural appetite for food unfitted to the conditions of gestation, as furnishing poisons which she has not the power to eliminate. Even creation itself, in the natural course of this event, has been openly assailed! It being asserted that pregnancy, in and of itself, admits of or induces conditions in the organism by increased systemic-cell activity, vascular and nervous system changes which encourage the increase and retention of toxic materials within the body favorable to the production of this disease.

Such an assault upon the most exalted function of animal life—the only function that offers excuse for our very existence—the one act in life affording absolute proof of our right of being—that of procreation charged with simultaneously originating by increased production of, and lack of resistance to toxic principles within that organism tending toward self-destruction, is scarcely worthy rational acceptance.

An eminent divine, in the application of the natural obligation, has said: "No man has a right to live a life that, should it become the universal life of mankind, would be his destruction." May we not then, looking with complacency on the functions of nature, from a rational aspect assume: That no organism, animal or vegetable, in the performance of its supreme physiological function, the highest representation of its power, could rightfully in its incipency, simultaneously acquire an attitude that would superinduce the production, retention, or mal-elimination of material favorable to the destruction of its own noble organic body, and thus too endanger the life of its offspring, the very object of its own activity. Such may occur as freaks in the conscious life, but we may with difficulty accept such as inherent in the course of a natural event.

Again, cause has been sought in the fetus, the defenseless unborn being in turn charged with a fault in the act of development which is hardly consistent with its existence—itsself a suicide slaying its progenitor. It has been claimed, then, that the fetus is the source of the toxic substance, then the funis, and finally the placenta, the usually unoffending afterbirth, whose almost sole transgression heretofore has been its exceptional falling from the more sublime to the ridiculous position of implanting itself at the mouth of the canal, thereby blocking the avenue to fetal escape. That by abnormal communication between the material and fetal blood current, the blood becomes mixed, forming an organic acid substance which produces intoxication, and finally that the causative principles of eclampsia are infectious and contagious.

Increased familiarity with these views has relegated them to the past as not tenable and we find the foregoing theories unsustained. Hence, it is generally accepted that "puerperal eclampsia" is not of renal origin, is not uremia, and that the pathological changes found in the kidneys, liver, or other viscera are resultant rather than causative; that neither the

fetus, funis, or placenta furnish the toxic principles for the production of convulsions, nor that the thyroid gland is abnormally deficient in its function to detoxicate the poison, or that eclampsia is a disease of infectious or contagious import.

There seems then to be no adequate reason for classifying this condition as a disease, nor as yet can it be said to have been so defined. The application of the term "eclampsia" is not particularly in keeping with its derivation. But what's in a name, since the original meaning is so soon lost sight of after once 'tis understood who or what is meant? However, the word "convulsions" carries with it a continuous and suggestive meaning and a reference to the original. When we say "puerperal convulsions" we are defining a symptomatic disorder occurring in pregnancy, characterized by convulsive seizures of sudden onset.

As regards etiology, then, there is yet much to be learned, and we may easily appreciate that one's right to an opinion must have a basis with some degree of soundness at least, and the result of observation and experience from personal investigation. However, speculation may not be entirely out of order in the formulating of suggestions. Reasoning has sometimes unveiled what experimentation failed to develop, and at less sacrifice, possibly. There are manifestations often in the course of life which do not carry with them proof positive of whence they come or whither they tend, but their cause, course, and results may yet be apparent.

While not prepared to offer proof of the actual existence of certain entities, nor do we desire to claim priority or originality in the suggestion, yet, may we not, reasoning from analogy, still look for a cause within the lines more exclusively bounding the field of pregnancy.

It is with pregnancy we are dealing, and it is admitted that the convulsions here considered are incident to pregnancy and have peculiarities which identify them with it, and differentiate them from other forms of convulsions. Again, that it is intra-uterine pregnancy, hence, the uterus is primarily the organ which is concerned. The nervous system of the pregnant woman is next to be considered, and the connecting link with the vascular system, through the vaso-motor centers a close second, and in line with these the lymphatic system. With the intimacy of association between the organs of gener-

ation and those of elimination by excretion, we readily find reason for disturbances during gestation.

Reflex neuroses are powerful engines for the destruction of equilibriums and it is not impossible that the final explanation will be that it is a purely reflex nervous phenomenon. Examples of pernicious vomiting in pregnancy are not wanting, but the real causes—the etiology and pathology—are not easy of explanation.

Anuria—total suppression of urine—without definable disease being present in either kidney, has been shown to be due to certain effects upon ureters at points remote from the pelves of these organs—or in cases of injury by accident, or by surgical trauma of the ureter of one kidney or that kidney itself has caused anuria in the other.

It is not necessary to elaborate with examples illustrative of conditions resultant from reflexes to assume the right to *suggest* a theory, though it might be required to establish one. But permit us to presume that when the original focus in the etiology of eclampsia is located, it may not be outside the area of the generative organs and probably within the body of the organ of gestation itself. It is to be hoped that still closer study may be made and that we may be enabled to learn more of the state of health of the uteri of subsequently eclamptic patients, prior to their becoming pregnant, for we may yet find the nuclei there. The other point of view, allow us to state, is the mental aspect.

In these days when so much is being brought to bear through psychological influences, it is befitting that the conditions of mind of the patient be not neglected, but carefully studied. There are present the physical phenomena, but whether resultant from primary mental, or physical action who shall say?

The pathology is perhaps less obscure than the etiology if we accept the changes found in the organs affected as the cause or result of eclampsia.

The first notable change is that of the blood and urine in the pregnant from that of the non-pregnant, which does not constitute a morbid, but a physiological condition, and yet similar changes in that respect in other organs in the absence of pregnancy might constitute pathology. Those changes found in organs as the liver, and the kidneys, temporarily present, in

the latter especially, as manifested by albuminuria, which is so constant a symptom presented during the course of an attack, comprise the pathology. Hence, we believe, that a constant etiology is as yet not established, neither have pathological conditions been sufficiently constant for application in the diagnosis. But in the symptomatology there is sufficient constancy and agreement for average correctness in diagnosis to outline a plan of treatment which may be worthy acceptance. This, however, must be broad enough to cover all cases, and sufficiently comprehensive to permit of selections for individual cases. For each case needs to be treated as a unit and individualized for the application of treatment peculiar to its requirements.

As generally accepted views, from the foregoing we may conclude:

1. That the blood of the puerperal eclamptic is heavily loaded with highly toxic materials.
2. That the origin, source, and specific character of the toxic principles are as yet not known.
3. That their presence may often be discovered in the pregnant patient if carefully and cautiously watched.
4. That their elimination may be effected in many cases, if thoughtfully treated.
5. That, in the instance of an attack, the emptying of the uterus affords relief and rapid improvement and usually recovery; particularly when accomplished in the early stages of the attack.

As a matter of convenience, the treatment suggests the division into medical and surgical, though the obstetrician is called upon to play the double rôle. We may the more easily define the line as drawn on paper than the attitude of the attendant in the lying-in chamber.

To-day the demands upon the accoucheur are more than that on the simple midwife of former times, and he may expect to hold himself in readiness to perform duties far in excess of the mere administration of drugs or the specific remedy.

To state the specifically medical, or those the physician should attend, and the specifically surgical, or those to be placed in the surgeon's care, or to say that the hospital is the only proper place to attend such cases, as has been suggested, is hardly within my province to define when considering you whom I am addressing. The best treatment undoubtedly will be

the best that in your judgment the environments afford, both as regards place and the attendants. Therefore, let me indulge in a classification which defines the character of what is to be done and how, rather than who shall perform it; leaving to each to make his choice and draw his own limitations. With prodromal symptoms there is opportunity for prophylactic elimination of the poisons. But when confronted with an attack the symptoms demand first, control of the convulsion; second, elimination of poison; and third, the removal of the apparent cause, primary, which is the presence of the fetus in utero. These results are best when accomplished on the Hahnemannian principle, namely, in the gentlest and safest manner, with the greatest skill governed by calm judgment, and by applying the selected homeopathic remedy consistently and intelligently, with due regard, however, for such other forms of treatment as experience has found valuable in the saving of the lives of these desperate cases.

No higher principle can actuate the practitioner of medicine than the desire of first removing the cause; for it is for this purpose that he has been impelled in his effort to find it. When not successful in his researches to locate that, there is left to him but a single method by which he may be safely guided, namely, the picture presented to him through the signs or symptoms. If capable of correctly interpreting these he finds himself in possession of a code in the conduct of the case, which is quite as unerring as that of one who depends upon etiology and pathology of inconstant or uncertain import; and since the welfare of the patient is the sole object to be obtained, we may not feel wholly unwarranted in drawing these conclusions.

Here is offered large opportunity for the application of the homeopathic remedy by the homeopathic principle, which will, on general principle, give in return the best results in the hands of those most skilled in prescribing. But because of our loyalty to a principle, founded upon a law which we accept as true, and believing that when correctly applied in all particulars it is unerring in its effects, we are not recreant to our trust in the recognition of other laws found to be the natural laws, as those of physiology and chemistry.

Therefore, may we not expect too severe criticism if we also see it to be our duty to direct attention as well to physical laws

governing our being as to a preferred law which may govern our well-being. It is with no intention of slight that homeopathic remedies, as such, are omitted in suggesting treatment, but rather that I have no peculiar competency in this line and might fail to increase interest in this subject by attempting to portray the individual symptoms, and might easily make applications that would be unworthy your endurance.

Hence, allow me to use terms as applying to physiological action as being more comprehensive and less voluminous. The treatment is easily seen to be prophylactic and immediate, and in either case medical and surgical. In the former, or preparatory stage, the chief result sought is the elimination of poisons from the system, through the excretory glands and organs, namely, the kidneys, the liver, the lungs, the skin, the alimentary or intestinal tract, and the lymphatic system: also to build up the resisting powers of the patient against the onslaught now portending. This may be accomplished in this stage through diaphoresis, diuresis, and catharsis, and proper attention to hygiene. The more natural means are always the best as a form of exercise, and class of diet, with baths and packs, hot or cold, such as conduce to this.

The selected remedy, or the drug necessary to produce by homeopathic or physiological action the desired result must be chosen, not only to eliminate poison, but to contribute power, by tonic action, possibly of chalybeate or proteid character, that may in turn assist in the upbuilding of the vital forces to resistance. In the instance of individual organ disease or conditions complicating pregnancy, demanding surgical interference, and it is warranted, let us not neglect the required attention whereby the patient may be put in the best possible condition to meet the exigency of her case.

In the past, it has been in but few cases, that opportunity has been afforded for the watchful care of the pregnant. By added knowledge to the profession and increased intelligence in the laity, we may hope for improvement in the future. While there are those of us who enjoy the privilege of consultation practice and the courtesy and confidence of our fellow practitioners and those who may indulge these privileges by nearness to those capable of rendering assistance or are within reach of institutional advantages, there are those also who are less fortunate.

When confronted by the spectacle of a case of puerperal convulsions in its active state there is demand for immediate treatment, and the request is made in no uncertain terms. The patient, though unconscious, perhaps, or just merging into, or emerging from a convulsion, has communicated to you in language of more visible form than words would be adequate to express, her need of relief. Three lines of treatment may be here called for: namely,

1. To control the convulsion and to allay nervous excitement.
2. To remove the cause, which is presumably the fetus in utero.
3. To eliminate systemic poisons.

The control is most speedily accomplished by anesthesia, the nervous excitation by narcosis, and during the conscious state by suggestion, and by appointments in the surroundings which give assurance, calm anxiety, and allay fear. During this state, attempt to empty the uterus is begun at once.

The two well-known anesthetics have their advocates and individual preferences, chloroform and ether. The former for its quick action and peculiar adaptability to cases in parturition. But if prolonged or profound anesthesia is desired, or long continued use is required, ether is not contra-indicated. Opium and its derivatives, morphia and codeia, have a usefulness that cannot be so safely dispensed with as some have contended. Bromide and chloral are of more doubtful utility and less used than formerly, though there are those who still use chloral with satisfactory results. It may rightfully be regarded as a very uncertain drug and unsafe compared with others mentioned. *Veratrum viride* tincture is growing in favor—used subcutaneously. The thyroid extract has secured a place and the suprarenals are knocking for admission.

I believe that the variability observed and the difference of opinion of the action of these drugs are very largely due to our inability to make appropriate application—that the drug is not chosen with due regard to the peculiarities of the patient and the totality of the symptoms.

Venesection is revived after a long sleep in the graves with the fathers, and there are some yet who seem to thirst more for blood than for righteousness. It would seem rather by mechanical action, than otherwise, that by the reduction of the

blood pressure to the relief of nerve pressure favoring circulation and the possible lowering of vitality that good is accomplished. It appears as doubtful as ever in its utility as an eliminator of the toxins contained in it, in such volume as is released, though if an equal or less volume of saline solution is returned in its stead—intravenous—there is a reasonable excuse for its being done.

It has its advocates and in selected cases possibly its usefulness—this, however, in the earlier stages, and before delivery, rather, as usually the loss of blood, later, from the uterus, would replace its need.

Spinal puncture, or “tapping the spinal cord,” on the ground that intracranial pressure is the direct cause of convulsions, is one of the first surgical measures suggested to be applied. From the premises it is logical, but will require strong proof by clinical results to warrant very universal adoption.

Elimination, as practised after an attack of eclampsia has begun, would vary from earlier treatment for the same purpose in that diuretics are to be omitted, since in renal congestion they are contra-indicated. Normal saline by enema, or hypodermically or hypodermoclysis, is in much favor, as also are large draughts of fluids by mouth, preferably pure water, to the extent of flushing the system. There is a caution to be advocated here in the overloading of an already overtaxed system with water, even, unless assured that it is being excreted either by the skin or kidneys, and the same may hold true of the saline if the lungs evince difficulty. The surgical procedure here is decapsulation of the kidneys in the belief that their release from pressure of the capsule and probably the relief from congested blood restores normal function.

Little doubt seems now to exist that emptying the uterus offers the surest, safest, and most rational and effectual means of terminating puerperal convulsions. In other words, as a complication of pregnancy the convulsions cease when delivery is effected. Terminating labor, terminates eclampsia.

There are grave thoughts for consideration in this phase of the subject. All preceding efforts have been directed to the conservation of life. The function of pregnancy is sacred, and when we come to deal with the method of treatment now suggested, much depends upon the term of development of the child, and whether we should consider this method as the

first or the last resort. If at full term, then the only query is how may it best be accomplished and what the gentlest and speediest manner, with least trauma, and to the purpose of saving mother and child.

It is right here that *surgical* interference may be *bound* to intervene. By normal labor if feasible, but if not successful then by the most natural means possible—slow, by induction, or by manual or artificial dilatation, version, or instrumental delivery.

The viable child has rights which we should feel bound to protect, and it is now that the question of operation by Cæsarean section must be considered. In the glowing success of present-day surgery, the formidable failures of the past are lost sight of, and with the frequent complications and difficulties attending premature delivery, even if near to term, with possible dystocia, other than the one we are primarily dealing with, it may be easy to see wherein this operation may be resorted to with less danger than a long drawn out artificial labor.

It cannot be here decided whether this is a means to adopt in general, but we may agree that it is an operation for serious consideration and adoption where indicated. And with the growing favor, it is evident that the indications for its application will increase with the success that follows its doing. We should appreciate such opportunities for relief sufficiently to give our patient the advantages which are her due, by conscientious and intelligent judgment, uninfluenced by past prejudices.



CLEFT PALATE.

BY DEAN TYLER SMITH, M. D.,

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College of Michigan.

The difficulties to be overcome in operations for cleft palate are many and real. The flaps to be used in closing the cleft are thin so that but a narrow coapting surface or border can be secured. They are stretched across the oral cavity as a curtain, hence cannot be immobilized or splinted by pressing them against a firm background. The unused or unopposed palatine muscles are more or less contracted, so it is difficult to fill the cleft without there being tension on the stitches. The tongue, that unruly member, will be pressed against the flaps, making tension even though the muscles are thoroughly relaxed by cutting. Crying is difficult to control and will cause tension on the stitches, as will sneezing or coughing. The parts cannot be thoroughly sterilized nor can efficient protective dressings be applied. It is impossible to make and keep the parts aseptic.

Notwithstanding these difficulties, text-book and journal articles discuss the subject as though it were an easy matter to build up deficient palates. In the series of successful cases reported, I imagine that second and third operations were in many cases necessary to secure success, even though they are not mentioned. I know of no other operation in general surgery that requires more technical skill, or more patience on the part of the victim and the surgeon in order to secure good results.

The surgeon is confronted by two problems when consulted regarding cleft palate repair. First, how old should the child be when the operation is made. The second, what operation to select, applies more to the inexperienced operator, for most oral surgeons have each some special method or modification that is his hobby.

The present tendency is toward earlier operations. The prevalent fear of operating on the very young is being greatly modified, if not dispelled. On theoretical grounds, and from what little experience I have had with these little patients, I endorse W. A. Lane's teaching. (*Edinburgh Medical Journal*,

March, 1904.) He would operate very early. His dictum is, "The best time is the day after birth, or as soon after that as possible." He claims these advantages for the early operation: The tissues heal well, digestion will not have been impaired, there will be less crying and no vomiting, it will be possible to get a much broader flap than later. Before the teeth are developed, the muco-periosteal flap can include the tissues over the alveolar margin. A further advantage claimed is that the "to-and-fro" passage of air shapes or develops the nasal lumen, so helping articulation. No operator seems to expect perfect phonation if the cleft involves the hard palate. The discussion in this paper applies especially to cases in which the cleft is complete, involving the alveolar process and lip.

The principal argument against an early operation is the danger attending it. My belief is that the danger is not near so great as we have supposed. The very young will stand traumatism and shock much better than the literature on the subject would lead us to expect. I have repaired a cleft palate and hair-lip at one operation on several occasions and the little fellows showed scarcely perceptible depression.

J. Berry (British Medical Journal, October 7, 1905) claims that in early infancy the soft palate is thin and delicate. He would operate later, but before the child is four years old. The soft tissues in these tiny babies are certainly delicate and tender, with little or no thickness. It requires more delicacy and skill to handle such tissues than the firmer tissues in a child a few months old. If union can be secured in these early cases, it is reasonable to expect the subsequent development of mouth and nasal tissues to be more natural, and that they will be better able to perform their functions than if the repair is delayed.

Again, if the cleft is once repaired, the health of the child will promise much better than if no partition is present between the nasal and oral portions of the cavity. At birth, these babies are, as a rule, as well nourished as those with normal mouths. Their vitality and cell resistance are doubtless often reduced by the kind of feeding and care to which they are subjected. Recognizing these possibilities, I am led to the belief that as large a per cent. of babies will reach the age of teething with early operation as with late, and will be in very much better physical condition. Another consideration:

it will be much easier to spray the mouth and nose and keep the parts clean and more nearly sterile, than if the child is old enough to be frightened every time he is looked at.

When the cleft involves the maxillary bone and lip, a new factor enters into the discussion. The premaxillary bone is separated widely from the maxilla by the cleft or clefts. By repairing the lip, and thus securing pressure on this bone, the gap will be greatly lessened in the course of a few months. It is also possible that the anterior portion of the cleft in the palate bone will be slightly narrowed. Because of this fact, A. W. Murray advocates repairing the cleft in the lip, and waiting for the changes before repairing the roof of the mouth. However, this narrowing will not materially affect the operation on the palate. It is true there will be an unfilled space in the anterior portion of the palate. This space would have been filled or partially filled by the premaxillary bone being pressed back in place had the lip been repaired some time before. But if the lip is repaired at the time of, or soon after the palate operation, the bone will be pushed back into place and the opening in the palate closed as well, if not better than if the lip had been repaired some time before the palate. With either plan, a second operation will have to be made in some cases in order to have the roof complete. At present, I am in the habit of repairing the cleft in the palate first. If the patient is then in good condition, the lip is repaired immediately. If not, the work on the lip is deferred for a few days. The repairing of the lip will add but little to the shock and I have not found it necessary to put off this work since I adopted the present plan.

I have not operated on any case as young as Dr. Lane speaks of, but I no longer put off cases because they are too young.

I would make the following summary: Reasons for making a late operation; say after six or eight months of age. The child is supposed to be stronger and better able to stand the operation than at birth. This will hold good in some cases.

Second, the tissues will be thicker and firmer, easier handled, and other things being equal, more sure to unite at the first operation.

The advantages of the early operation are: First, the healthy condition of the child, making it better able to stand

the ordeals incident to the treatment. This will certainly be true of some cases; and I believe in a large majority. If a child, born with such clefts as we are considering, is weak and puny at birth, the chances are that he will die of malnutrition before he is many months old.

Second, the vitality of the tissues will not have become impaired by digestive troubles or malnutrition.

Third, there will be fewer pyogenic germs lodged in the mucous membrane.

Fourth, there will be less resistance to the measures that may be used to keep down germ development.

Fifth, wide flaps can be secured.

Sixth, bettered general health if the operation can be successfully performed.

Seventh, better development of the nasal lumen with better articulation when the child is grown.

What operation to perform is a problem as real and difficult of solution for the inexperienced as the one we have just been studying. That the ideal operation has not been discovered is evidenced by the large number and varied methods in vogue.

The operation that comes nearest to being standard is made by paring the margins of the cleft; cutting through the soft tissues at the palato-alveolar junction, raising the mucous membrane and periosteum from the palate bones, and sewing the edges of the cleft. There are some modifications of this operation. They relate to the extent of the cutting and the manner of sewing. A few other operations bring in new ideas or methods. T. W. Brophy operates on children who are quite young; regards the best time before three months of age; says some of his best results have been with infants from ten days to three weeks old. He forces the palate bones together by passing a silver wire through the maxilla from side to side and twisting it sufficiently to bring the bones into the desired position. The edges of the cleft are pared and stitched. E. Owen also reports good results from this method. It does not seem to have been equally successful in the hands of all operators. J. Berry claims to know of five deaths in eleven cases. One of the others had necrosis of bone but subsequently recovered. In lieu of the successes of others, I should regard such a report as an argument against the particular operator

rather than against the operation. I have never used the method or seen it used.

Fillebrown ("International Text-Book of Surgery") has an original idea in his method of securing flaps as well as in suturing them. He makes no lateral incisions over the hard palate. After paring the margins of the cleft he separates the muco-periosteal flaps with a "hoe knife," cutting outward from the cleft margins. He makes lateral incisions in the soft palate. After paring the margins of the cleft he separates reinforcing the edges with the regular row of stitches. The chief objection to this method, as it appears to me, is, that the flaps are drawn straight across the mouth, making the roof flat, and separating them from the palate bones. It is only by changing the arched to the flat roof, that the edges of the flaps can be approximated. The mattress stitches are needed to stretch the flaps so that their edges can be sewed.

As before stated, the usual operation, or uranoplasty as it is called by some writers, is modified by changing the lateral cuts. Berry secures complete relaxation of the flaps by cutting all restricting muscles and bands of mucous membrane. After the stitches are in place all bands of tissue that make any tension are divided.

C. B. Porter and others believe that the less the palate tissues are cut, the better will the speech function be. This seems a reasonable proposition but one that would be difficult of demonstration. Porter seeks, in a unique way, to protect the palate after operation. He operates only after the child has teeth to which a dentist can fit a plate. After the operation the plate is put in place. It protects the palate from the tongue and helps to keep the roof of the mouth cleaner than if it were not covered. Whether the plate can always be made to accomplish what it is used for is doubtful. Even if a plate can always be made that will work successfully, the age at which it will be necessary to do the operation makes the method impractical for any but neglected cases. The operation for cleft palate should be made before the child learns to talk. It is much harder to overcome bad habits of speech than to learn right methods at first. Muscles will be used in unnatural ways to produce speech if the palate is deficient, and they will continue in the same way if the operation is made after the habit of speech is formed.

Other operations or modifications of operations have been used to close cleft palates. Those we have considered show sufficiently the trend and diversity of the work in the treatment of these cases.

The ordinary operation promises best so far as securing flaps is concerned. They can be made by a little extra cutting of muscles, to cover the gap without much stretching. The outer portion of the flaps will, when sutured, lie against the surface of the palate bones. However, there are two weak points in the operation. First, when all the constricting and stretching bands of muscle and mucous membrane are cut, the soft palate is liable to be too flabby for good functioning. Second, even if there is no tension on the palate tissues, when the palate is still, the pressure of the tongue, swallowing, sneezing, or coughing will make tension on the stitches. To overcome these difficulties, I have added mattress sutures to those ordinarily used.

I use these sutures in about the same way as does Fillebrown. The description of his operation was published before I thought of the method I now use. I had doubtless read of his operation, but had so far forgotten it as to be wholly unconscious of its influence when working out my plan. Even if I was influenced, there is enough difference in the stitches in the two methods, and in the purpose for which they are used, to warrant the claim on my part of a new modified operation. Fillebrown uses silver wire over silver plates. The plates are necessary because of the strong traction that is expected to be made by the stitches. The stitches are a necessary part of the operation he performs. He makes no lateral incision over the hard palate, hence the flaps have to be stretched in order to bring their margins together.

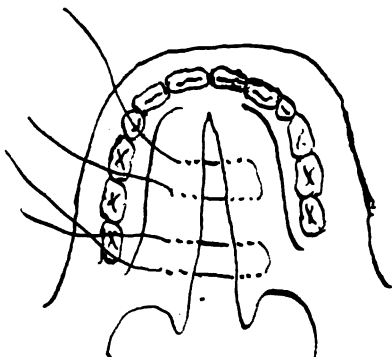
I use silkworm gut for the mattress stitch. The flaps are already fairly well relaxed. Slight traction may be made by the stitches, thus avoiding so extensive cutting of the palate tissues, but the real object of the stitches is to protect the marginal sutures from such tension as is still present even when the flaps meet easily and without traction. They remove all the tension that would be brought to bear on the marginal sutures by any movement of the palate caused by pressure of the tongue, forcible passage of air, crying or swallowing. They make a fairly good immobilization of the line of sutures.

Besides, as applied, they make possible a broader surface of coaptation.

The operation is performed as follows: The flaps are made in the usual way, cutting the muscles that would interfere with the easy bringing together of the margins. The edges being pared, the mattress sutures are introduced and tied. These are of silkworm gut. In placing them, the needle enters the flap near the end and about midway between the margin and the lateral incision. It passes obliquely through the tissues and emerges on the under (upper, according to position of child) side near the free edge. The needle enters the other flap on the under side near the margin and opposite to the point of emergence from the first flap. It passes obliquely upwards through the tissues coming out on the free surface at the same relative position that it entered the first flap. It now retraces its course through the flaps, parallel to the first part of the stitch and about a quarter of an inch from it. This thread makes the mattress suture, and when it is tied it will bring the margins together. Rather it will bring the lower edges of the margins together, rolling the outer edge out. This will give us the broadest possible coapting surface when the marginal sutures are placed. Two or three mattress sutures will be required to control the whole length of the flap. It is evident that if these stitches are properly placed they will take all tension off the coapting or marginal sutures. I have seen it stated by one surgeon that he uses silk instead of silkworm gut because the latter irritates the tongue. Another surgeon uses the silkworm gut because it will irritate the tongue so that the child will keep it away from the flaps. The silkworm gut serves a good purpose. Unless the gut is very fine and pliable, silk should be used in the uvula. I have discussed the treatment of cleft involving the palate bones. The mattress stitch is just as important when the cleft is only through the soft palate.

The cleft or clefts through the maxillary bones requires an entirely independent operation. This operation is done at the same time as the palate operation or soon after. The proper management of the premaxillary bone will help materially in closing the space in the palate that could not be closed with the flaps. It is my practice to break this bone loose if the cleft is wide, and push it back or downward into apposition with

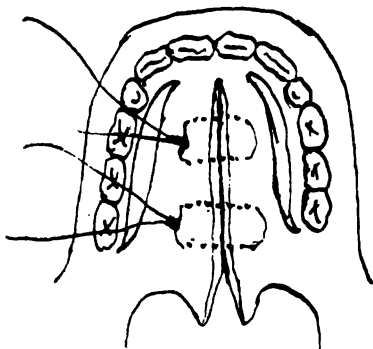
the edge of the maxilla. If the cleft is unilateral and the pre-maxilla cannot be broken and reduced, I cut through the alveolar juncture of the opposite side with bone shears so as to partially free the portion we wish to displace. When the



1. Cleft pared, lateral incisions made, muco-periosteal flaps separated from palate bone and mattress sutures in place but not tied.

lip is repaired it tends to hold the fragment back so the opening in the palate may entirely close in a year or two.

I have delayed reporting on this subject until I had operated on enough cases to demonstrate the practicability of the



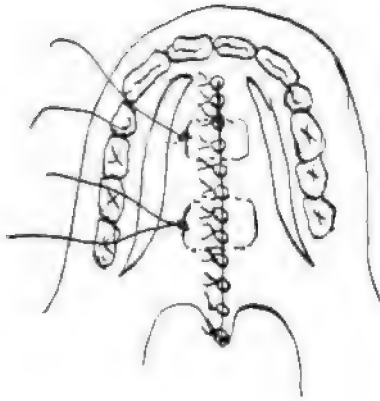
2. Mattress sutures tied, showing the eversion of the raw edges of the flaps.

method. I have had at least seven cases. (My house doctor says we have had ten or a dozen.) I expected to be able to give ages and details that would make the report of some value. You can imagine my disappointment when I discovered that the charts for all but two of the cases had been misplaced and

could not be found. Such is the fact; hence, I can only give a summary of the cases.

Before using the mattress suture, it was the exception to have a case hold throughout the entire length of the cleft. We often had to make two and sometimes three operations before we were satisfied with the result. I may have been less skillful than other operators. I do not wish to boast of inefficiency, but state these facts for the sake of comparison. I know that since using the mattress suture, I expect and usually get complete union the first time.

Of the cases treated with the mattress stitch, one was a failure. The patient was a tiny delicate baby, with an exceedingly wide cleft of both palate and lip. Because of the frail appearance of the child I hurried the operation. The haste was unnecessary for, when the work on the palate was



3. All sutures in place and tied.

completed, the pulse and respiration were about as good as when we began. We then repaired the lip. The child suffered but little from shock.

The mattress suture will not cause the parts to heal unless the balance of the work is properly done.

In one other case, the uvula did not hold. It was this case that led to the suggestion regarding silk sutures in this part of the palate.

All the other cases held throughout the entire length of the cleft.

TOXEMIA OF PREGNANCY.

BY J. A. G. HAMILTON, M. D.

It is not my intention to enter into the many theories as to the etiology of this somewhat mysterious disease; that it causes serious symptoms and many deaths, accompanying pregnancy, no one will deny. We are to a great extent ignorant as to the exact nature of the toxic substances concerned, though in the present state of our knowledge it would seem most natural to suppose that they are metabolic in origin, and are directly connected with pregnancy, and are in all probability indigenous in the gravid female; though whether derived from the mother or fetus, or both, it is not known. It is only in later years that this important subject has received the attention it deserves, and no doubt medical science will in time clear the horizon in this obscure condition; however, our limited knowledge in the present state demands that far greater care and watchfulness should be used, and much more effective and intelligent measures be employed by obstetricians to prevent the development of the dangerous toxic disorders of pregnancy, and to combat them energetically when present.

The present view of the nature of the toxemia of pregnancy classes the disease as a functional disturbance of the liver, usually but not necessarily attended by severe anatomical lesions of this organ; and, secondly, with functional disturbance and severe anatomical lesions of the kidneys and other organs. From a study of the vast amount of writings on the subject, there appears to me to be at least three forms of toxemia of pregnancy:—1. Toxemia with persistent vomiting or “hyperemesis gravidarum.” 2. Acute yellow atrophy of the liver. 3. Toxemia with convulsions, or eclampsia. In all cases there are functional disturbances in the liver, followed later on by necrotic lesions; in eclampsia there is more early involvement of the kidneys as manifested by scanty urine, and the early appearance of pronounced albuminuria, and the presence of casts and edema. In vomiting, on the other hand, scanty urine casts and albuminuria are not an early symptom. It used to be generally believed that eclampsia was a disease which frequently appeared without any premonitory symptoms, but I believe there are symptoms premonitory to

most cases of eclampsia, and these can be recognized in the majority of cases early enough to prevent the convulsions, by immediate and energetic treatment, or if they cannot be prevented, we can interfere many times, early enough to save both mother and child. It is not reasonable to suppose that a poison strong enough to cause such terrible convulsions, as are seen in this disease, can accumulate in the body without presenting any symptoms, until the outbreak occurs. It used to be taught that eclampsia was identical with uremia and kidney disease, and while the association is undoubtedly of very frequent occurrence, the relation between them as cause and effect is no longer held. It has been found that only a small proportion of women suffering from chronic nephritis had eclampsia, and cases have been reported where the urine did not contain albumen at the time of the eclamptic attack. Cases of vomiting in pregnancy are usually classed as reflex, neurotic, or pernicious; the mild cases in early pregnancy are usually neurotic or from reflex causes, and yield to treatment; but if we get persistent vomiting, especially in the later months of pregnancy, toxemia should be suspected. There is generally a history of persistent vomiting of all ingesta which does not yield to treatment, constant headache, some rise of temperature, a rapid pulse, and other marked symptoms of profound toxemia. Slight jaundice is often present.

I have here the notes of two cases. One was apparently a case of "hyperemesis gravidarum," and the other one of eclampsia, with serious involvement of the kidneys.

Case I.—*Hyperemesis Gravidarum*.—Mrs. K., æt. thirty-two, nullipara. Seen in consultation with Dr. Hamilton on March 15, 1906. I am indebted to him for the following note:

February 26, 1906.—Last period on September 27, 1905; about four weeks ago had a fall, striking herself on the left side of the abdomen; this was followed by attacks of severe pain across upper part of abdomen: has not felt well since. The attacks of pain accompanied by vomiting.

March 7.—Vomiting much increased, bringing up almost everything.

March 11.—Temperature 101, pulse 120. Considerable tenderness over abdomen; vomiting almost constant.

March 12.—Temperature 97, pulse 140. Abdominal pain and tenderness; vomiting.

March 14.—Temperature 100.4, pulse 140. Tympanitis marked; vomiting persistent.

When I saw her on March 15 her condition was bad in the extreme. Pulse 150, temperature 101.2, face drawn and pinched, constant vomiting, abdomen distended and tender all over. I advised her removal to the hospital at once. I then gave it as my opinion she was suffering from toxemia of pregnancy, but was puzzled by the evidence of peritonitis present. Admitted to hospital on the evening of March 15.

On examination.—Abdomen very distended, from pubes to ensiform cartilage uniformly tender, uterus enlarged slightly above level of umbilicus, no fetal heart sounds felt, but presented all the other symptoms of six months' pregnancy. Tongue dry and furred. Temperature 101.2, pulse 150. Urine acid, no sugar or albumen. Keeping in mind the history of a fall a few weeks previously, I thought there might have been some injury to the hollow viscera, or some trouble in the appendix; under the circumstances, as she apparently had some peritonitis, I thought it wiser to open the abdomen. This was rapidly done at 8 P.M. on the evening of admission. The peritoneum and intestines were slightly injected, showing a mild peritonitis, nothing abnormal felt in liver, stomach, or gall bladder; appendages normal; uterus enlarged up to umbilicus; a piece of omentum found running down to an adherent appendix. This was divided. Appendix had apparently been inflamed at some time, but defunct at present. However, it was removed as a precautionary measure. There was absolutely nothing found within the abdomen to account for tenderness, distention, and mild peritonitis. Abdomen closed. Patient vomited a quantity of brownish fluid several times during operation. Stomach was washed out with saline until fluid returned clear. She stood the operation well, considering her condition beforehand. Pulse 140, regular and fairly strong. Ordered a pint of saline with an ounce of brandy per rectum, to be repeated four-hourly. Pulse reached 160 during the night; about 3 A.M. labor pains came on, and at 6.30 she was delivered of a small dead fetus; placenta and membranes came away easily, complete. When seen in the morning of the 16th she seemed fairly well. Pulse 120, full; temperature had dropped from 101 to 98.6. Tongue moist, not much distention; except for a slight congestion at base of

right lung, she made a good recovery, and by the 24th her temperature and pulse were normal. I have little doubt this was a case of "hyperemesis gravidarum." What was the cause of the peritonitis I am unable to say; of course it might be urged it was unnecessary to open the abdomen, but it was only after carefully studying the case and consultation with my colleague that I did so, and I think under the circumstances I was justified. She certainly presented every symptom of well-marked peritonitis, and the persistent vomiting might have been caused by some pathological lesion in the abdomen. However, I have no doubt the spontaneous emptying of the uterus, and thus getting rid of the toxins, saved her life; possibly it would have been better to have emptied the uterus at the time of operation, but her condition was too bad at the time to allow of anything more being done, and I quite expected labor would set in spontaneously after the operation.

Case II.—*Decapsulation of Kidneys for Eclampsia*.—F. C., æt. nineteen years, admitted to Adelaide Hospital on September 18, 1906, with the following history:—About ten days ago began to get headaches, four days later got severe pain in epigastrium, which lasted for four days. Remembers nothing more after. Had three convulsions on the night of the 18th.

September 19.—Was in a drowsy semi-comatose condition, complaining, at more conscious moments, of headache and nausea; there was slight edema of face and lower extremities. Temperature 99, pulse 64, small and feeble. Tongue moist and coated. Respiration perceptibly quickened, slight dullness at extreme bases of both lungs; very cyanosed; unable to give an account of herself. Urine 1020 acid, almost solid with albumen, heavy deposit of urates; only passed two or three ounces in last twenty-four hours. P. V. cervix soft, but closed, no indication of beginning labor. Body of uterus enlarged equal to seven months' pregnancy.

September 20.—Condition much the same. Bowels acted twice in the night; urine had to be drawn off; only ten ounces passed in the twenty-four hours. No convulsions since night of the 18th; urine nearly solid on boiling; epithelial and granular casts under the microscope; no estimation of urea made, a fact which I regret. As the uremic symptoms appeared to be more marked than the toxemic ones (she had had no convulsions for thirty-six hours) I thought it better to decapsulate

her kidneys as advocated by Edebohls, and, if necessary, evacuate the uterus afterwards.

September 21.—Operation.—A curved incision was made on each side downwards and outwards and then down and inwards, and the kidneys exposed and delivered with north pole first; the kidneys were large and white; capsule fairly loose. Capsule split and stripped back to pelvis. Patient left the table in fairly good condition. Had a good deal of pain, relieved by 1-6 grain of morphia. From 6 P.M. on 20th to 6 P.M. on 21st passed five ounces of urine. From 6 P.M. on 21st to 6 P.M. on 22d passed sixteen ounces. From 6 P.M. on 22d to 6 P.M. on 23d passed thirty-two ounces.

September 22.—Had a good night, still some pain; ordered mag. sulph. every hour till bowels moved. Urine 1022, less albumen; temperature 100.2°; pulse 104, fair volume.

On the night of the 23d labor pain commenced, and a dead fetus born at 12.15 A.M. on the morning of the 24th.

September 26.—Passes about forty ounces of urine in the twenty-four hours, containing small trace of albumen. From this on she made steady progress.

I admit that this patient *might* have recovered by evacuating the contents of the uterus without renal decapsulation; but the indications of deepening uremia certainly did not point that way. The practical deduction from the result obtained in this case is that, in renal decapsulation, we possess an additional potent resource in the treatment of puerperal eclampsia; and, as Edebohls points out, "we might even go a step further and try early renal decapsulation in puerperal convulsions occurring prior to the beginning of labor; the mother would certainly be benefited, and the occurrence of premature labor and the necessity of inducing it might possibly be averted." The treatment of eclampsia is an important one, and if we could arrive at some satisfactory treatment it would be a great boon, as I am sure we all recognize that cases of eclampsia cause more distress and anxiety to the medical attendant than any other condition one can meet with in practice.

The treatment is prophylactic and curative. The prophylactic treatment may be briefly summarized as the prevention of any accumulation of toxins in the system, combined with ordinary hygienic measures to maintain and improve the patient's general condition. The routine is simple, and its princi-

pal object is the maintenance of free action of the excretory organs, with careful dieting and frequent examination of the urine. It is generally believed now that some premonitory symptoms are always present. The most constant and important is frontal headache. The curative treatment consists in prevention of further absorption of toxins by removing the cause, namely, emptying the uterus and by eliminating the toxins, and by lowering arterial pressure. The latter can be best done by venesection or frequent doses of *veratrum viride*. There are two classes of pulse found in eclampsia—the full, bounding, rapid pulse, and the slow, small pulse. In the former it would seem as if venesection or *veratrum viride* would suit best, while in the latter, perhaps nitroglycerine would suit better. Elimination is best done through the bowels. Normal saline solution has been recommended to dilute the poisons, but it appears to me to defeat the object by tending to produce edema of the lungs. I do not think diuretics do much good, as secretion seems to be at a standstill. Thyroid gland has been tried, it lowers tension and promotes diuresis, and undoubtedly in some cases does good, but it is not safe in the asthenic type on account of its action on the heart. Chloroform has, I think, a limited field, as it increases the already too profuse bronchial excretion and pulmonary edema, and causes still further embarrassment of the kidneys, which are already eliminating far below the normal amount. Time will not allow me to enter into the various methods of emptying the uterus; but each case will have to be treated as quickly as possible, compatible with cleanliness and the condition of the parts; but, as I said before, in addition to the treatment just mentioned, we have in renal decapsulation an additional potent resource in the treatment of eclampsia, more especially in cases like the one just read, where the nephritic symptoms appeared to be most prominent.



A RARE INSTANCE OF EXTRA-UTERINE GESTATION DIAGNOSED BEFORE RUPTURE, AND REMOVED INTACT.

BY GEORGE BURFORD, M. D.

AND

CHARLES E. WHEELER, M. D.

Dr. Charles Wheeler, in attendance on a lady suffering with recent uterine hemorrhage, came to the conclusion that it was due to early pregnancy, and asked Dr. Burford to meet him in consultation. The history was fairly clear. Married less than a twelvemonth, this lady had normal periods till December, 1906, except for a delay of fourteen days before the September period came on. When this delayed one appeared, however, it was perfectly normal in every way, and did not suggest an early miscarriage.

In January the period was missed, and about six weeks after its expected advent comparatively slight hemorrhage, irregular in its course, but never entirely ceasing, continued up to the time of consultation. Once and again a small clot had been passed: but no membranous shreds were at any time noticed, nor was the flow ever malodorous. Further, abdominal or pelvic pain had at no time been a marked feature, and the patient felt so well that she resented the rest and the restrictions on which Dr. Wheeler had insisted.

Some two weeks after the commencement of hemorrhage, a consultation was held and the aspects of the case reviewed. Physical examination—a matter of considerable difficulty in this instance—indicated, from the somewhat enlarged and softened uterine organ, the occurrence of pregnancy; but the clinical history did not quite tally with the usual symptoms of an early miscarriage. The possibility of an extra-uterine gestation was discussed, and it was decided to administer an anesthetic, and, while clearing up the remaining points in the physical condition, to arrest the uterine hemorrhage also.

Examination under anesthetic clearly showed a soft elongated swelling apparently running parallel to the long axis of the uterus, and about the size of an English sausage. The uterus was pushed over to the right. The diagnosis of tubal gestation was at once made, and in order to eliminate any

complicating condition of the endometrium this was scraped without drawing the uterus down. Shreds of membrane were thus removed from the uterine interior, and the cavity was lightly packed with gauze. The voluminous curettings from the uterus were now submitted to an expert for microscopical examination. Had the large decidual cells commonly present in the uterine exfoliations in tubal gestation been demonstrated in this case, a valuable confirmatory element in the diagnosis would have been established. But careful and re-



Fallopian tube in section showing unruptured tubal gestation.

peated examination failed to reveal characteristic decidual elements; the pathologist's finding was indeterminate.*

This negative result gave us pause; for besides this there were two other important diagnostic elements lacking, which are usually present in developed cases of tubal gestation. These factors are: (1) the repeated occurrence of pelvic pain, due to the distention of the tube; and (2) the symptoms of collapse, due to hemorrhage from rupture of the gestation-sac. Both these diagnostic aids were conspicuous by their absence. A careful review of the clinical history, together with the physical examination, confirmed us in the belief that we had here to deal with a veritable case of extra-uterine gesta-

* Professor A. Martin, in his classical work, "*Die Krankheiten der Eileiter*," mentions five of his own cases where an examination of curetted fragments gave the same negative results.

tion. Granting the lack of support from the microscopic investigation, and the absence of two important clinical symptoms commonly present, the residual evidence, nevertheless, dovetailed satisfactorily in authenticating the presence of extra-uterine gestation rather than any other pathological abnormality.

As positive evidence we had—

- (1) The hitherto unbroken bodily health.
- (2) The regularity of the period up to eight weeks prior to date.
- (3) The irregular, almost painless, leakage from the uterus of a fortnight's duration.
- (4) The increased size and softened consistence of the uterine organ.
- (5) The absence of any characteristic products of gestation in the uterine cavity.
- (6) The finding of a definite one-sided swelling by the side of the uterus, and obviously tubal in origin.
- (7) The correspondence of this with what a six or eight weeks' tubal gestation would probably be in point of size.

On the other hand, there were—

- (1) The absence hitherto of any abdominal pain of note.
- (2) The lack of decidual elements in the curetted shreds from the uterus.
- (3) The non-occurrence of collapse or any other indication of intra-peritoneal hemorrhage.

Assessing the values of these negative indications, the time had presumably not yet arrived for the consummation of abdominal hemorrhage. The absence of decidual elements in the uterine shreds has, as already indicated, been noted in other cases; while as to the lack of abdominal pain in the clinical history, this, though a commonly observed symptom, is not invariable.*

In any case, we had to deal with a pelvic growth clinically associated with the uterine hemorrhage. The balance of evidence indicated this growth as probably an extra-uterine gestation discovered before rupture. The patient and friends were accordingly advised of these facts and our interpretation;

* "Wehen-artige Schmerzen zwar sehr häufig das vorzeitige Ende der Tubar-schwangerschaft begleiten, aber doch durchaus nicht constant," Martin, "Die Krankheiten der Eileiter," *op. cit.*

and operation recommended. To the latter consent was at once given, and the lady was transferred with extraordinary precautions to a nursing home for the necessary procedure.

The following day Dr. Burford opened the abdomen—Dr. Johnstone and Dr. Wheeler assisting—and immediately came upon the distended left fallopian tube, as previously diagnosed, adherent, and purple-black from the hue of contained blood-clot. But there was not the slightest evidence of any effused blood in the abdominal cavity, the fimbriated end of the tube was sealed, nor was there any sign of rupture at any part of the thinned-out tubal wall. Our diagnosis was confirmed: we had evidently to deal with that *rara res in terra*, a fallopian tube converted into a gestation sac, exposed by operation, anterior to rupture.

The gestation tube is spoken of by authorities as spherical, or pear-shaped. Our specimen could more properly be described as sausage-shaped, and of about the same dimensions—an English sausage being naturally the standard.

The adherent distended tube was carefully separated from numerous points of attachment, elevated from the pouch of Douglas, ligatured and removed in the usual way. The left ovary remained behind intact. The right appendages were examined and found normal. It is the duty of the abdominal operator always to examine the vermiform appendix: that ceremony was here foregone, the viscus having been removed at some earlier time.

The abdomen was closed in terrace-form, and the patient put back to bed. The recovery was unbroken, no rise in temperature accruing, and the incision healing throughout by first intention. From the nursing home a journey to the seaside was made three weeks and a half after operation.

We cannot put our hand, at this present moment, on any similar case in medical literature, where an unruptured gestation tube has been diagnosed as such, and removed before the catastrophe. Doubtless similar cases have found their way into specialist literature, but they are so uncommon that we have no clear recollection of these. As a matter of fact, rupture and its clinical issues are usually important elements in the diagnosis of extra-uterine gestation, especially during its first three months. Usually the first definite signal of the ill-starred conception is in the more or less serious internal

hemorrhage which ensues on the expulsion of the embryo from the tube into the abdomen. True, this is often preceded by uterine hemorrhage, such as is observed in an early miscarriage; but it is not given to many to differentiate with certainty between primary uterine hemorrhage due to miscarriage, and secondary uterine hemorrhage due to tubal conception. To the trained observer the character of this secondary hemorrhage furnishes at least hints for further investigation as to the presence or no of tubal pregnancy. It was the character of the hemorrhage that in this case raised the suspicion of tubal pregnancy before any pelvic examination had been made.

In this case, further, two elements commonly present were also wanting: the occurrence of colicky pelvic pains and the presence of decidual cells in the membranous shreds obtained from the uterus. The irregular pains, due to the increasing distention of the tube, are important clinical contributions. And when decidual cells can be demonstrated in the uterine curettings or exfoliations, these lend definite aid to the diagnosis. But, as this case testifies, both may be concurrently absent, without invalidating the conclusion to be drawn from the other symptoms and physical signs.

Finally, let us put as pointedly as possible, how necessary it is to examine carefully each instance of suspected miscarriage, before making a positive statement as to its ordinary character. If the case presented no other features of interest, it were worth recording as showing a pitfall in the path of the unwary obstetrician. Ninety-nine cases may pass without a break in the uniformity of the diagnosis of ordinary miscarriage, but the hundredth may prepare an unpleasant surprise for the medical attendant, accustomed to rely on the laws of average. For there is no reputation so precarious as that of the obstetrician, and the price to be paid for this sustained reputation is eternal vigilance.



THE INDUCTION OF PREMATURE LABOR.*

BY F. C. WATSON, M. D.

My subject is of vital interest to all general practitioners, and while the conditions demanding the premature induction of labor are not met with often, yet they do occur with such frequency that probably none of us have escaped. When we find ourselves confronted with conditions calling for such a procedure, we would fain shrink from the grave responsibility, yet some physicians, I regret to say, are prone to consider these cases lightly. I believe that our keenest judgment will be necessary to decide the wisdom of the move and should the induction of labor be deemed necessary, no small amount of skill, time, and responsibility devolves upon the operator.

That we may treat the subject more intelligently, let us consider it under two heads, (1) the induction of abortion, and (2) the induction of premature labor. The progress of gestation may be arrested artificially at any period in the interests of either mother or child. If arrested *before* the child is viable we call the operation the induction of abortion. If *after* the child is viable it is called the induction of premature labor. The date of viability is, therefore, the dividing line between the two.

Induction of Abortion.

Under what conditions are we justified in producing abortion?

The general rule is this: When the further continuation of the gestation period would seriously imperil the life of the mother it is justifiable to produce abortion, in her interest. To be more specific; in persistent and uncontrollable vomiting, when all other treatment has failed, abortion is called for; in serious heart, lung, and kidney affections, pernicious anemia, severe chorea, advancing jaundice, etc., prompt arrest of gestation may be the only means of saving the mother's life; whenever there is such mechanical obstruction in the genital tract

* Read before the Medico-Chirurgical Society of Central New York, December 6, 1906.

that the birth of a viable child is impossible, induction of labor is called for.

Vomiting.—When this condition refuses to respond to our indicated remedies and the stomach fails to retain the food, rectal alimentation should be tried, giving the stomach absolute rest. The correcting of local cervicitis sometimes proves beneficial. Nor should faradization of the stomach and the dorsal spine and galvanization of the central sympathetic be forgotten. When all other means, as I before stated, have been exhausted, then interruption of pregnancy is surely indicated.

Heart.—I do not believe it is necessary to discriminate between the various forms of valvular disease in the relations to gestation, and I doubt whether it is possible to do so with accuracy. To be sure, statistics seem to show that mitral stenosis is the most serious complication of gestation but we must not forget the remarkable frequency of this lesion in females. The question is principally one of compensation, and this may be more or less perfect in each form. In the treatment of failing cardiac compensation in the pregnant woman the same treatment should be followed out as in valvular disease in general. If this does not restore the muscular equilibrium induction of labor should be resorted to. I will say, however, in this connection, if serious symptoms appear before the sixth month it is manifest that gestation cannot go on to full term without the most serious peril to the mother. On the other hand, if they do not take place until the seventh or eighth month it may be expected that under proper treatment the patient may go to the full term of gestation.

Lungs.—In cases of tuberculosis, especially of the lungs, gestation should be interfered with for when it is allowed to go to full term, the disease seems to have been gaining energy all the while and after confinement progresses with renewed and increased force to a fatal outcome in an amazingly short period.

Kidney Troubles.—In general, it may be said that the presence of albumin in the urine of the pregnant woman is not of itself a pathological phenomenon and it is only when the presence of albumin is associated with casts and deficient secretion as indicated by deficient urea, that albumin becomes an indication of disease. Unless the case clears up and the symptoms dis-

appear under a proper regimen and medication, induction of labor will be the only alternative.

Pernicious Anemia.—We all know that in this disease the prognosis at best is very grave, but few cases recovering. Goodno says: "Cases occurring in pregnant women are believed to be specially unfavorable." Therefore, in view of such facts, I believe the pregnancy should be arrested.

Severe Chorea.—A severe form of Sydenham's chorea occasionally occurs in pregnancy. If under proper treatment the severity of the symptoms is alleviated, the prospects are that full restoration will follow. If the symptoms are of sufficient severity that the life of the mother is in jeopardy, there should be no hesitation in removing the contents of the uterus.

Advancing Jaundice.—When this condition is promptly recognized and the gastro-intestinal tract is given proper and efficient treatment, a fatal outcome can sometimes be avoided. Premature expulsion of the fetus is to be expected in well-marked cases, and in protecting the interests of the mother no effort should be made to avoid it. In fact, induction of labor is called for in this condition.

Mechanical Obstruction.—Excessive contraction or deformity of the pelvis, tumors blocking the pelvis, extensive cicatricial contraction of the vagina or cervix and advanced carcinoma of the uterus or vagina are the most common forms of such mechanical obstruction and demand the arrest of gestation.

Induction of Premature Labor.

When the continuance of gestation to full term would expose mother or child to serious risks which might be diminished or avoided by the arrest of the process, the induction of premature labor is indicated. No absolute rules can be laid down but each case must be judged upon its own merits. To be sure, the success which has followed modern Cæsarean section and symphysiotomy has limited the range of this operation. It is argued that if the mother's life is not endangered it is better to allow the child to attain its full development and to deliver by section or symphysiotomy than to bring into the world an immature child whose chances for living and thriving are frequently less. Pelvic deformity that would pre-

vent the birth of a living child at full term, but which would allow the safe delivery of a premature viable child has been considered one of the main indications for the induction of premature labor, and I believe should still hold good, although it is claimed that by symphysiotomy a full-term child can generally be delivered through a pelvis as small or even smaller, with probably little more risk to the mother. That may be all very well for expert operators and where the proper facilities can be secured, but in deciding upon the operative measures to be adopted in cases of moderate pelvic contraction, it is only just to remember the claims of the induction of premature labor and the good results it has yielded in the past. In certain grave diseases which threaten the mother's life, this operation will always hold its place. In placenta previa, when a severe hemorrhage has taken place, labor should be induced in the interests of both mother and child. In eclampsia many authorities believe that the safest treatment is the induction of labor; others, however, strongly advocate the expectant plan. When there is a dead fetus in utero injuriously affecting the mother's health or where the mother is liable to die before labor sets in, there can be no question as to the advisability of the operation.

Prognosis.

The prognosis for the mother is generally good but should always be guarded. In addition to the increased risk of septic infection the state of the mother's health may materially affect the prognosis. If there has been serious organic disease the chances for recovery will be lessened. The prognosis for the child in premature labor, the more immature it is, the worse the prognosis. Between the thirty-second and thirty-sixth weeks its tenure of life is feeble and it will require the greatest care.

Methods of Procedure.

Many methods have been devised and used for the induction of labor. Some are efficient but more or less dangerous; others are safe but less efficient; some are prompt and are most useful when speedy results are required; others are slow and are

applicable only when time is not of importance. It is, therefore, clear that no one method can be applied to all cases.

Scheel's Method—Puncturing the Membranes.—A round quill or other pointed instrument is passed through the os-uteri and is made to puncture the presenting bag of membranes. The liquor amnii drains away and uterine contraction is set up. This method is safe if the rules of antisepsis are followed, and is most useful when it is desired to relieve uterine tension; but it is slow, and labor is apt to be tedious and painful because of the early loss of the waters.

Krause's Method—Introduction of an Elastic Bougie into the Uterus.—After an antiseptic vaginal douche has been given, two fingers which have been rendered aseptic and well oiled, are passed up to the external os, and if possible, through the cervix to the internal os; a well-oiled bougie (No. 10 or 12) is passed along the fingers and is guided by them into the uterine cavity between the membranes and the muscular wall. It is then gently rotated and made to work its way several inches upward toward the fundus. The higher it can be made to go the more certain and rapid will be the onset of labor. A light vaginal tampon of iodoform gauze is then applied to keep the bougie from slipping out and to prevent the entrance of air or septic matter into the uterine cavity. If active labor pains have not begun in twenty-four hours, the tampon and bougie are removed, a thorough vaginal douche is given and another bougie is introduced on the opposite side of the uterus. Usually one introduction of a bougie is sufficient to induce labor, though sometimes two or three or even more may be necessary. Exceptionally, this method may fail altogether, and other measures have to be employed, but it is the safest and best for ordinary purposes, when a speedy result is not required, and it is the one in most common use.

Tamponing the Vagina.—A vaginal tampon of gauze or of cotton pledgets is passed up to the cervix. It is sometimes a useful aid in the induction of labor but is too slow, uncertain, and painful to be relied upon alone. It is of great service in placenta previa and in some cases of accidental hemorrhage. It is useful also to strengthen labor pains which are growing weak or to apply counter pressure to a presenting bag of membranes which it is desirable to keep unruptured.

Cohen's Method—Intra-uterine Injection.—A special nozzle

or an elastic catheter is passed between the membranes and uterine wall as in Krause's method. Sterilized water or some other aseptic fluid is injected through this nozzle until tension is complained of. The injected fluid separates the membranes from the uterine attachments and stimulates contraction. The nearer to the fundus the fluid is conveyed and the larger the area of detachment, the more certain and active will be the contraction. This method is efficient but *dangerous*; several fatal cases have been reported from shocks and from entrance of air into the uterine veins.

Kiwisch's Method—Vaginal Irrigation.—A stream of hot water (100—120° F.) is directed against the cervix for ten or fifteen minutes at a time, every two or three hours, until labor pains set in. Some obstetricians use cold water, while others follow the hot douche immediately with a cold douche for the purpose of obtaining a more stimulating effect. This method is tedious, painful, and uncertain, and involves the risk of congestion and metritis.

Dilatation of the Cervix.—When it is required to empty the uterus as rapidly as possible it may be necessary to dilate the cervix artificially. There is more or less risk attending forcible dilatation and it should not be attempted unless the case is urgent.

There are other methods, e. g., electricity, aspiration of the uterus per vaginam, injection of glycerine known as Pelzer's method, but I have dwelt upon the leading ones.

As the operation of induction of abortion or of premature labor always carries with it more or less risk, it is always wise to secure the advice and support of a colleague in consultation. Moreover, there often crop up certain moral and religious questions which the physician should not attempt to settle but should leave to the decision of the family and its religious advisers.

Conclusions.

1. Induction of premature labor often demands our most discreet judgment, and its performance no small amount of skill.

2. It sometimes carries with it much greater responsibilities than are conceded by the average practitioner.

3. Gestation may be, and should be, arrested artificially at any period in the interests of either mother or child.

4. Labor should be induced prematurely, only as the *dernier ressort*, and when all other means for removing the pathological conditions present have been exhausted.

5. The prognosis for the mother is generally good, but should be guarded. For the child, much depends upon the period of gestation.

6. The method of procedure best adapted to each individual case should be applied.

7. It is perhaps needless to call attention to the fact that the strictest antisepsis should be adhered to, for a laxity in this respect has more than once been productive of troublesome and often serious results.



TENDON VERSUS CATGUT.

BY NICHOLAS SENN, M. D.

The ideal suture is the one which furnishes the requisite tensile strength for a sufficient length of time for the united parts to form an organic unyielding union, and after having fulfilled the mechanical indications is removed by absorption and substitution of living for dead tissue. Silk, wire, silkworm gut, horse-hair, and other inabsorbable substances will continue to command the confidence of the profession as material for removable sutures, but cannot hold their present position in surgery as buried sutures. In the abdominal cavity silk is my favorite suture and ligature material, and if the wound heals by primary intention, very seldom gives rise to late complications, as the foreign substance is surrounded by tissues noted for their intrinsic power to effect speedy and firm encapsulation. The employment of metallic sutures will at no distant time be limited to the suturing of bone. The ideal material for ligatures and buried sutures of the future will be animal tissue, made sterile by effective, safe, bactericidal agents, which not only destroy the existing bacteria, but which at the same time have the power to neutralize the toxins which they may have generated in the dead tissue, and which possess the necessary tensile strength to meet the mechanical indications for a sufficient length of time until their presence and function have become superfluous by the completion of the process of repair, when they are removed by absorption and their space occupied by living tissue.

For centuries surgeons have been in quest of such a material, but it was reserved for Lister to lead the way to a satisfactory solution of this important scientific and practical problem. Of all animal tissues, catgut has had the most extended trial, and has come into general use wherever surgery is practiced. Other animal tissues have been recommended and used, but never became a serious rival of catgut.

Gridlestone, of Australia, recommended kangaroo tendon as a superior animal tissue for ligatures and sutures. H. O. Marcy became the champion of this material in this country two years later, and has used it exclusively since. It is only proper to state here that when I visited Australia two years ago I made inquiries and examined different samples of the

so-called kangaroo tendon, and found that most of the material imported was not kangaroo tendon, but the tendon of a much smaller but more numerous animal, the wallaby. The tendon of the kangaroo is very coarse and the smallest fibers obtainable are the size of an ordinary knitting needle, while the tendon of the wallaby is made up of much finer fibers.

In 1884, H. W. Dudley, in a paper published in the Transactions of the Texas Medical Society, entitled "Animal Ligatures and Sutures; Tendons of the *Lepus* or Mule-Eared Rabbit as a Means for the Arrest of Hemorrhage, and the Closing of Surgical Wounds," advocated the employment of the split tendons of the jack rabbit. I have seen no mention of anyone else using this material. It is quite certain that some American surgeons have used the sterilized deer tendon, but of this I have no reliable information. From these notes we must draw the conclusion that catgut is the only animal tissue that has held the confidence of surgeons from the dawn of aseptic surgery until the present time.

What is catgut? How this material was ever called by this name is unexplainable, because catgut literally means the intestine of a cat, while the catgut in use is made of the small intestines of the sheep.

The fresh intestines are cleansed and macerated for twelve hours in running water; then the inside and outside surfaces are scraped with a dull knife, the intention being to remove the mucosa, the transverse fibers of the muscular coat, and the peritoneum, leaving only the subserous tissues with a small part of the longitudinal fibers. After treating the remaining middle layer for a time in a solution of carbonate of potash, and after careful rinsing, the moist threads are twisted on a rope-maker's wheel; then they are sulferized, dried, polished with glass powder, and finally rubbed with olive oil. It requires no stretch of imagination to realize that in the mechanical preparation of the intestine, parts of the intestinal coats which should be removed remain. In examining numerous transverse and longitudinal sections of raw catgut in the surgical laboratory of Rush Medical College, we had no difficulty in finding remnants of the mucous lining and transverse muscular fibers. The material is taken from a part of the animal always the seat of pathogenic bacteria. What remains or should remain of the intestinal wall are the longitudinal muscu-

lar fibers and the loose meshwork of the subperitoneal connective tissue. By twisting, the tensile strength of the material is increased. The looseness of the tissues renders them highly hygroscopic, which can be readily demonstrated by immersing raw catgut in a warm physiologic solution of salt. The threads increase in bulk, and thereby their elasticity is increased. This is perhaps no disadvantage when catgut is used as a direct ligature, but when employed as a ligature *en masse* or as a suture, its mechanical reliability suffers. The tetanus bacillus and its spores, so common in meadows and barnyards, are common inhabitants of the intestinal canal of sheep, and in case of imperfect removal of the mucosa and its glandular appendages, are very liable to remain in the tissues out of which catgut is made. The spores of the tetanus bacillus are very resistant to all methods of sterilization, and I have personal knowledge of several cases of tetanus which could be traced to no other source but the catgut employed in the operation. Ordinary catgut has not a good reputation in the suturing of wounds when it becomes necessary to secure accurate coaptation of important structures by mechanical aids for at least two or three weeks, as, for instance, in radical operations for hernia. By the absorption of the tissue fluids the sutures swell, lose their tensile strength, become more elastic, and yield enough to interfere with an ideal healing of the wound. It is for this reason that silk and metallic sutures take the precedence of catgut in the practice of many surgeons in closing abdominal wounds, and in all operations in which the mechanical aids must be relied upon for at least two or three weeks in obtaining an ideal wound healing. Muscle tissue, of which catgut is largely composed, is a poor material to rely upon as a suture. The anatomic arrangement of the connective tissue of the subperitoneal coat is not much better, as its elasticity is greatly increased by the imbibition of the tissue fluids. Finally the twisting of the muscular and connective tissue fibers is the most serious objection to the make-up of the catgut suture. Catgut can be relied upon as a ligature material, as in my experiments: "On Cicatrization of Blood Vessels," made in 1884, I ascertained that obliteration in arteries takes place in from four to seven days, according to the size of the vessel, and in veins in from three to four days. As a material for buried sutures it is inferior to more permanent

animal tissue, as during the same series of experiments it was shown that medium-sized catgut is completely absorbed at the end of fourteen days, and of course long before the expiration of that time has lost its function as a mechanical support. More durable catgut, such as chromicized catgut, overcomes these objections only to a certain extent, but even this, the most resistant preparation of catgut, has its serious defects when it becomes necessary to make use of sutures which must hold the tissues in uninterrupted, accurate contact for three or more weeks, in order to obtain a satisfactory healing of the wound.

Tendon Tissue.

The compact, non-elastic tendon tissue of some of the larger land and sea animals furnishes the most desirable and useful material for buried sutures and ligatures. The primitive fibrils of firm non-elastic tendons are arranged longitudinally, and will not yield under the traction to which they are exposed when employed as sutures or ligatures. The dense connective tissue of which tendons are composed is but scantily supplied with blood vessels, and is less subject to microbic invasion than any other tissue in the body, with the exception of cartilage. The comparative avascularity of tendon, the compactness of the fibers of which it is composed, resist cell invasion and absorption for a much longer time than muscle, elastic and loose areolar tissue. The tendon suture of the same size as catgut and prepared in the same manner can be depended upon to serve much longer as an efficient mechanical support than catgut.

Tendons of Arctic Sea Animals as Suture Material.

I became interested in tendons of large sea animals as a substitute for catgut last summer during my trip to the heart of the Arctics with Commander Peary, the well-known explorer of the Arctic regions. I went with him as far North as Etah, the most northern habitation of the Eskimos, six hundred and fifty miles from the North Pole. We visited all the settlements from North Star Bay to Etah, and I was thus given a rare opportunity to study the life, habits, and manners of the aborigines of that region. The skill of the Eskimo women as seamstresses attracted my attention. They prepare

the skins of the fur-bearing animals and convert them into clothing and boots. They make their own thread out of the tendon of the narwhal. The narwhal (*Monodon Monoceros*) is a huge sea beast, ordinarily twenty feet in length. On each side of the spine is a broad, long tendon which furnishes the sewing material. After drying this tendon the women chew it and strip it into threads of suitable size for their different kinds of sewing. Boots made by these women are water-tight, and only the most prolonged and hardest kinds of usage have any effect on the seams. Delicate threads a yard in length are the pride of the Eskimo women in sewing the fur coats and trousers for themselves, their children, and their husbands. I was not slow in appreciating the fact that threads made of the narwhal tendon are durable, and would in all probability on trial prove to be an excellent substitute for catgut. The narwhal appears to select the upper part of Inglefield Gulf as a favorite feeding ground during the short summer months. When we arrived in that part of the Arctic waters, the natives had killed a young narwhal on that day and brought it on board of our ship. When the animal was cut up, I secured the entire tendon on one side of the spine, as wide as a hand and at least four feet in length. I hung it up in the rigging and after it was dried the women chewed it and stripped it into threads. On my return I iodized the threads by immersing them eight days in a one per cent. aqueous solution of iodine, and began to use them in my operative work at St. Joseph's Hospital. The results were all that possibly could be desired. In only one case of more than fifty did a stitch abscess form, and the infection in this case could be traced to careless handling of the sutures. I studied the time of absorption of the material by using different sizes of the threads as deep removable sutures, which were removed from one to three weeks after the operation. At the end of one week the sutures showed but slight changes from absorption. At the end of two weeks they were still firm, but the part of the ring in touch with the soft tissues was reduced about one-half in size. At the end of three weeks the sutures had undergone advanced absorption, but were strong enough to hold the parts which they embraced in accurate coaptation. The fresh tendons of the sea animals in the Arctic regions are not only aseptic but slightly antiseptic, as these animals imbibe iodine from the sea

water and ingest it with their food. This material could be obtained for a trifle from the natives through the agency of whalers who visit the east coast of Greenland annually. One day near the mouth of Inglefield Gulf, our party killed fifteen walrus and one seal, and I secured enough tendon material for trial. The tendons are disposed like in the narwhal on each side of the spine. The fibers, however, are coarser and cannot be split to the same length. Properly prepared and sterilized, the tendon furnishes, however, an excellent suturing material. The walrus (*Trichechus rosmarus*) is an immense marine mammal, which weighs on an average one ton and is an inhabitant of the Arctic regions. A few pounds of powder or a few sides of bacon would purchase from the natives enough tendon material to supply one of the largest hospitals for a year.

Whale tendon I obtained at a whaling station on the coast of Labrador, where its commercial value is almost *nil*. The sperm whale and the baleen or whalebone whales (*Mysticelæ*) have become quite rare even on the coasts of Labrador and Greenland, as the aggressive chase of the whalers has driven them to more inaccessible regions. The day before we called at this whaling station, three of these sea monsters were brought in. I was given a large slab of tendon tissue from the back, and I dried it in the rigging of the ship. The Sisters at the St. Joseph's Hospital found it impossible to split it in finer threads than those of the coarsest kangaroo tendons. I have made quite an extensive trial with these coarse sutures, properly iodized, in operations for the radical cure of hernia, with the most satisfactory immediate and remote results. After a somewhat extensive experience with the tendons of these sea animals as a suture and ligature material, I would accord the narwhal first, walrus second, and whale the last place. I am satisfied that the tendon tissue of these sea animals of the Arctic regions is far superior to the tendon tissue of land animals, from anatomic and bacteriologic standpoints, and hope that it will receive the attention to which it is entitled by its intrinsic qualities. Finally, I am convinced that from a commercial, scientific, and practical point of view, tendon tissue is destined to take the place of catgut in the armamentarium of the surgeon, and in the operating room of hospitals, both in military and civil service.

A CLINICAL EVENING.

A Clinical Evening of the British Homeopathic Society was held on January 3, 1907, under the auspices of the Section of Surgery and Gynecology. Cases were exhibited and discussed, the notes of which follow below.

CASES.

*Tumor in Right Loin.**

Emily R., aged thirty-two, single, milliner, was quite well until two years ago, when she got a severe chill on a long railway journey. Two days later, on resuming work, felt "internally cold," and urine on being passed felt hot. Seven days later there were increased desire and frequency of micturition, and then followed an attack of cystitis, which lasted from March until November, 1905. During this time the menses ceased, and have not reappeared; always regular before. In November, 1906, again caught cold; this was speedily followed by severe pain in the right renal region, which was radiating and exhausting, causing her to feel faint and sick, and to perspire profusely.

When admitted to the hospital there was an obvious swelling in the right renal region, which did not move with respiration, was fairly circumscribed, and somewhat tender on pressure; it was uniformly dull on percussion. Has been recently examined under x-rays, but no stone could be made out. Urine contains some pus cells, but no crystals or *Bacillus tuberculosis*.†

Remarks on this case were made by Drs. Blackley, Byres Moir, Goldsbrough, Wynne Thomas, and Granville Hey. The consensus of opinion on the nature of the growth was that it was probably tubercular.

Dermatitis Exfoliativa.‡

Dorothy McC., aged fifteen. Skin began to be affected when she was eleven years old. Had a glandular abscess in neck at

* Exhibited by Dr. Galley Blackley.

† An exploratory laparotomy was performed on this case by Mr. Knox Shaw on January 22. The growth was found to be mainly below the kidney, and firmly fixed to it and surrounding parts, extending to the vertebral column on the left and to the flank on the right, and up to the under surface of the liver. Many of the mesenteric glands were much enlarged. One of these was removed and sent for examination to Dr. Watkins, Pathologist to the Hospital, who reported that it was undergoing caseous degeneration, but no tubercle bacilla were found.

‡ Exhibited by Dr. Galley Blackley.

four years old. When first seen as an out-patient in the summer of 1906, had dry seborrhea of scalp and generalized moist exfoliating dermatitis of neck, trunk, and limbs. Since her admission to the hospital, under the influence of arsenicum and ol. morrhuae the eruption has become quite dry, but continues to peel in papery scales of varying thickness.

Dr. Burford inquired whether thyroidin had been used in this case.

Dr. Blackley replied in the negative. Only two medicines had been used. During the summer, for a couple of months or more, the patient was given rhus, and now she was having arsenic in the third decimal, one-grain doses. He had tried thyroidin in one or two similar cases, one in particular of an old lady with general exfoliating dermatitis, who was exceedingly ill for a very long time, and he thought it made her distinctly worse. It may have been that she was a bad subject for thyroidin, because it was not every patient that could bear that drug. She did not have large doses, only receiving a grain at a time; and although the dose was further diminished, he found the condition was aggravated; there was some vascularity about the skin, and she was very uncomfortable in her general state.

Dr. Madden inquired what was used for the discharge?

Dr. Blackley replied that nothing had hitherto been used, except a dusting powder of boric acid, starch, and oxide of zinc.

*Rheumatic Heart Disease.**

Rheumatic heart disease in a girl aged fourteen, showing the result of peri- and endo-carditis. Large area of dullness extending from right of sternum into left axilla, in transverse measurement eight inches. No reduction in dullness after rest, medical treatment, and Nauheim baths.

Dr. Byres Moir remarked that his case was not a controversial one, as everybody agreed the condition was very bad pericarditis.

Dr. Goldsbrough inquired whether colchicum had been given.

Dr. Byres Moir replied that both colchicum and colchicin had been frequently given, but no satisfactory treatment had yet been found.

The president asked whether crategus had been used.

Dr. Byres Moir replied that he had not tried it, because he did not think it was indicated.

The president thought crategus had a very wide sphere of action, not in the pericardial, but in the myocardial aspect of such cases.

* Exhibited by Dr. Byres Moir.

*A Case of Osteosarcoma.**

D. L., aged fifty-six, engineer. Patient states that in June, 1905, he had stoppage of the bowels, with fecal vomiting, said by doctor to be due to liver disease. He has lost 28 lbs. weight in the last six months, and has suffered from acute pain in the iliolumbar region for some months, both day and night.

When seen, October 23, 1906, patient was pale and thin, and felt worn out for want of sleep and from constant pains. Bowels acted daily whilst living on milk. Urine free and yellow. Present weight 10 st.

On examination a large hard tumor was found in the right iliac region, firmly attached to the ileum. The mass was rounded, smooth, and tender on moderate pressure. The distance from iliac spine to the umbilicus was 6 1-2 inches, and the tumor occupied 3 1-2 inches. Rectally the tumor could be felt as a round mass attached to the ileum.

Symphytum ϕ \mathfrak{m} .iii., t.d.s., was ordered, and a compress of crushed comfrey root to be applied every night. The relief to the pain was immediate, the second night patient slept the whole night, and he has since been able to continue his work as an engineer.

The improvement has continued up to date, January 1, 1907, and the tumor appears by careful measurement to have decreased in size. Patient himself says he is sure there is less fullness. The patient's weight has slightly increased, whereas previously there was a continuous decrease, being, October 23, 10 st.; November 20, 10 st. 4 lbs.; December 4, 10 st. 2 lbs.

The internal medicine has been symphytum ϕ \mathfrak{m} .iii., October 23 to December 4; hecla lava 6, December 4 to January 1. The comfrey poultice was continued the whole time.

Dr. Byres Moir thought that in this case hecla lava should be kept in reserve.

Dr. Epps stated that the compress was continued until last week. A month ago he gave hecla lava 6, but during the past week the treatment had somewhat passed out of his hands, the doctor giving cancerinum 200, one dose.

The president inquired if the symphytum had been stopped.

Dr. Epps replied in the affirmative. It was given for two months in three-drop doses, and as a compress. Then the compress was continued, and hecla lava was given in the sixth trituration from that time up to January 4. The improvement consisted in the absence of pain, possibly reduction in the size of the tumor, a stoppage in the loss of weight, and a general improvement in the man's feelings and condition.†

* Exhibited by Dr. Washington Epps.

† Since the meeting of February 26, symphytum ϕ only has been given, with occasional compresses of the crushed comfrey root. The tumor is, without doubt, smaller; the man looks almost in robust health, is doing full work, and has increased in weight to 10 st. 11 lbs.

*Caries of the Spine.**

Caries of the spine under treatment by a new method. The child (A.K.), aged one year and eight months, is on a modification of Bradford's frame. This position is maintained constantly for twelve to eighteen months, while medicinal treatment is given, and until the disease is cured.

*Lupus.**

Extensive tubercular disease of the skin (lupus) in a boy (Ernest W.) aged five. When two years old the eruption first appeared. He has had treatment at the Royal Free Hospital, where the patches were scraped seven times, and again at University College Hospital, where the operation was repeated under an anesthetic.

Since March 15, 1906, he has been taking tuberculinum by the mouth only, in varying dilutions from 6 c. to 200 c., and nothing else. Photographs taken before and during treatment show the progress of the case.

Chronic Myelitis with Remissions.†

E. F., aged forty-nine, female, cook, has suffered nine years, admitted to hospital on December 22. Onset of symptoms gradual. Cannot ascribe a cause. Illness began with numbness in the lower extremities, tightness round waist and failure of walking. Was treated in the National Hospital, and in two months nearly recovered, except girdle sensation remained. With slight symptoms she continued until three months ago, when numbness and failure of walking returned. No history of other illness. Father died of paralysis, mother of cancer.

Present Condition.—Is rather depressed. Has occasional throbbing headache. Speech and organs of vision normal. Sensation diminished in all qualities, nearly symmetrical in upper costal spaces, and thighs from upper two-thirds. Can feel warmth, but nearly insensible to cold; no dissociation. Complains of tight sensation around trunk from mammæ to waist. Cannot stand with eyes closed. Hand-grip weak, especially right. Gait parietic and inco-ordination well marked. Plantar reflex delayed and diminished, nearly lost on right side. Abdominal and epigastric reflexes absent, knee-jerks present, nearly equal. Micturition is slow at times, at others sudden and uncontrollable. Bowels always confined; skin dry, especially of feet. Fairly well nourished generally. Bruises easily without her knowledge. Menstruation ceased for seven months until past week.

* Exhibited by Dr. Roberson Day.

† Exhibited by Dr. Goldsbrough.

Questions for diagnosis: Is the case myelitis, tabes, syringomyelia, or a functional neurosis? Suggestions for treatment.

Dr. Goldsbrough remarked that this case was rather a difficult one to diagnose, because of the mixture of the symptoms, but the reason he came to the conclusion it must be a chronic inflammatory state rather than a systemic degeneration was that the onset of the symptoms nine years ago was followed by a fairly rapid recovery in the National Hospital. The patient remained in that condition, with slight symptoms, until three months ago, when the present symptoms came on again. The diagnosis was based on the mixture of the symptoms rather than the definite sequence of motor or sensory development, and the absence of the pupillary signs. There was a question whether the case was purely functional neurosis, but he did not think that that opinion could be held in view of the very definite symptoms pertaining to the sensory and motor regions, and also the reflexes and sphincters.

Dr. Madden inquired whether there were any optical symptoms.

Dr. Goldsbrough replied in the negative, and that there was neither nystagmus nor speech derangement.

*Spasmodic Torticollis.**

F. G. C., aged thirty-one, male, clerk and subsequently traveler. Six years ago began to have neurasthenic symptoms, fear of being out of doors, rush of blood to the head, and tremor. He changed his occupation, went to Canada, and undertook manual labor. Was better at first, but overworked himself and returned home worse. Could not trust himself alone; went into business and failed. Spasmodic wry neck then ensued gradually. The head was rotated to the left, and fixed. Was treated in the National Hospital with rest, massage, and general faradism. The spasm disappeared, except that he could not lie on his back or left side. In January, 1905, it returned, and he attended the London Homeopathic Hospital in February. He improved under *ignatia* until May, when he discontinued attendance. Two months ago the spasm began again on the left side. The head was rotated and fixed, except when lying on the opposite side of bed. Admitted December 22 in that condition; has since acquired partial control of equilibrium. Very excitable, and anxious about his health. Fears every trivial event; hands always damp. Functions otherwise normal. No history of rheumatism. Family history good, except father neuropathic.

Dr. Goldsbrough asked for suggestions in regard to the treatment of the case. Personally, he thought it was a case

* Exhibited by Dr. Goldsbrough.

where suggestion might be of use. He had not used hypnotic suggestion, but he had tried to explain to the patient the condition he was in. He believed the condition was almost entirely a psychical one. The patient was of a very highly neurotic temperament, and if he only knew how he could maintain his equilibrium, good results might follow. Ignatia had been given, which relieved the patient very much on a previous occasion. Dr. Goldsbrough intended to apply the faradic current to the muscles on the opposite side to the spasms.

Dr. Byres Moir suggested that a course of exercise for the purpose of building up the patient a little would be of benefit, as the man was physically unfit. Failing that, he recommended aurum, as he had seen spasms removed with that remedy.

Dr. Deane thought that if the patient received a month's drill under a sergeant his condition might be improved, especially as there was a sergeant at present in the hospital.

The president suggested that if aurum and exercise failed, tetanum, the nosode of tetanus, from the live bacillus, might be used as a possible remedy.

*General Paralysis.**

W. D., aged forty-seven, a window-cleaner, always a very sober man, and has never had syphilis.

About eight years ago fell from the top of a folding ladder (7 to 8 feet), with his chest across a bed, not much hurt at the time, and went on with his work. About a year later had scarlet fever, soon after which his present illness began with at first backache, then gradually he got weak and thin all over, for which, in February, 1901, he was an out-patient at the London Homeopathic Hospital, under Dr. Goldsbrough, and subsequently an in-patient under Dr. Blackley. The diagnosis then made was the early stage of general paralysis. The medicine he had chiefly was phosphorus. After about three weeks he went out much improved, and for a time seems to have resumed his work as a window cleaner.

The symptoms of general muscular and mental weakness soon began to return, however, and for the last three or four years he has done nothing, and has practically been dependent on public and private charity for his support.

On December 8, 1906, he came into the Phillips' Memorial Hospital, Bromley, his condition then being: His mind seemed always in a state of confusion. He seemed dazed if asked a question, and answered after a long time with great hesitation and some trembling. He says his head feels misty, but he has not much backache. Back and legs are weak, and he can hardly walk or stand more than a few moments, and then

* Exhibited by Dr. Madden.

staggers. His gait is markedly ataxic, and he cannot hold up at all with his eyes shut; pupils sluggish. The knee-jerks are exaggerated, and all reflexes are obtainable, though not very well marked. Backache not severe. No paralysis of anus or bladder. Appetite is very poor. He is not sick, but constipated. Sleeps very poorly as a rule.

He was put on ign. 1x gtt. v., t.d.s., and bell. 1x at night, and he is now very decidedly better. He stands and walks much more strongly and steadily. Appetite is good, and, as a rule, he now has very good nights. He has never had any fits or convulsions, nor any mental delusions of the usual character; has no fibrillary twitchings in the cheek and tongue; and, as you see, is little if any worse than he was five to six years ago; so that it seems as if his disease has been arrested for a very much longer time than is at all usual.

Dr. Madden remarked that the chief interest of this case was its long, lasting character. The case was of over six years' duration, and the patient had not advanced beyond the initial stages of general paralysis. The question was, was it possible there had been any mistake in the diagnosis? Personally, he did not think there had been, unless it were a case of very unusual history. If it were a case of arrested general paralysis, it was very unusual for it to be arrested for so long. He thought it must be largely due to the fact that the patient had neither of the two great toxins in him which were usual in such troubles; he had never had the specific disease, nor had he been an alcoholic. The patient's condition was one very rarely seen six or seven years after the onset of the trouble.

Dr. Blackley said the patient appeared to him to be very much in the condition he was in when he left the hospital in 1901. He desired to inquire whether it was the opinion of those who saw him that his gait was an ataxic gait, because during his stay in the hospital his gait was examined on several occasions, and the conclusion come to was that it was not characteristic of anything in particular; it was a shuffling gait, but nothing more. Personally, he did not regard it as a distinctly ataxic gait.

Dr. Wynne Thomas thought it was an open question whether the phosphorus and ignatia had had very much to do with the patient's improvement. While the man was in the hospital he improved considerably up to a certain point, but soon after he went out he got worse again. Since he had been in the hospital for a second time he had received proper nursing and good food, and he had improved up to a point, but it was a question whether he would not go back to his old condition after he had been out of the hospital a week or two.

Dr. Blackley stated that the patient was only in the hospital for three weeks in 1901, although Dr. Goldsbrough had him under observation for a short period previously.

Dr. Goldsbrough stated that the symptoms rapidly improved when the patient was in the hospital. He thought the patient was an example of a negative kind of paralysis, i. e., what was described in books as paralytic dementia, which followed, as a rule, the active symptoms of general paralysis. There were a certain number of cases who had negative symptoms right through, and they were generally much slower and less conspicuous in their symptoms than the active ones. He did not see why the patient should not go on for ten or fifteen years longer in his present condition if he was not cured. When he was in the hospital under Dr. Blackley's care he received phosphorus 6x for some time, and certainly improved very much. The failure of memory and powers of attention, which were the chief paralytic features of the patient at the present time, indicated in his opinion, that phosphorus would still do him good.

The president inquired whether phosphorus had been given.

Dr. Madden replied that phosphorus had not been given lately. He had only had the patient under his care for a month, and during that time he had received ignatia.

Dr. Granville Hey thought the symptoms of the patient indicated that suggestive or hypnotic treatment might do good. He remembered a case, treated by Professor Fraser in Edinburgh, where the symptoms entirely disappeared under the hypnotic influence.

Dr. Goldsbrough inquired whether the patient in that case had lost his power of attention, because that was a very important point.

Dr. Granville Hey replied that, so far as he remembered, the case was very similar to the present one.

Dr. Goldsbrough remarked that in the present case the patient's power of attention was very weak; he could not fix his mind on anything.

*Carcinoma of Breast.**

This patient, aged forty-two, presented the following history: Some years ago she came with an advanced scirrhus of the left breast. Operation was undertaken by Dr. Burford, and the patient made a good recovery. Thyroidin and cacodylate of soda were administered at various times. In nine months recurrence took place. A nodule was removed, and this occurred again and again until a fresh hard knot showed itself almost before the last scar had healed. Removal of both ovaries was now advised and carried out, and the patient at once put on cacodylate of soda. The latter was steadily continued for over two years. Occasional courses of x-rays were also given. During this time no further recurrence had

* Exhibited by Dr. Burford.

developed; the patient had put on over 2 st. in weight, was now perfectly well, could move her arm with ease, and go through her daily duties without let or hindrance.

*Cancer of Cervix Uteri.**

Dr. Burford also showed a case of vaginal hysterectomy for cancer of the cervix uteri. The operation showed a threatening condition of the broad ligament tissues on the left side after the uterus had been removed. She was also put on cacodylate of soda, 1-4 grain thrice daily. Eleven months had now elapsed; the scar was perfectly free from any nodular thickening, the patient suffered no pain, had no discharge, and was perfectly well.

*Microscopic Demonstration of Cancer of the Breast.**

In the case from whom this specimen was taken the patient, who was unfortunately unable to be present, had had repeated courses of X-ray application, covering some years anterior to operation. On examination the pathologist inquired if the growth had not been subjected to X-ray treatment, pointing out that the cancerous cells showed ample evidence of abortive power of the cathode rays, which, in fact, had arrested the proliferation of the cells under examination. The growth did not involve the skin, and the breast was well supplied with adipose encasement. The X-rays had to traverse these intermediate tissues before impinging on the diseased structure.

Dr. Madden remarked that he had been exceedingly interested in Dr. Burford's case, in which Dr. Burford had acted in consultation with him (Dr. Madden) and in which Dr. Burford had been successful in dissipating the final remains of the recurrence by the removal of the ovaries and the use of cacodylate of soda. Dr. Burford did not mention that at the time of the operation there were still some unremoved nodules round about the scar, which entirely disappeared without operation after the removal of the ovaries. He had examined the patient that evening, and found there was not the slightest trace of any nodule or pain near the scar. The treatment had resulted in an absolute cure. Had the operation been performed after the last perceptible trace of the nodules had been removed, it might have been supposed that they had exhausted themselves; but there were nodules present at the time of the operation on the ovaries which had disappeared, and had not returned after two years; Dr. Burford's report of the pathological condition showing the effects of the X-rays under an unwounded skin being most encouraging. Hitherto

* Exhibited by Dr. Burford.

the impression had been held by many doctors that X-rays did not penetrate through a sound skin, but in the case under discussion they had certainly done so. With regard to the suggestion that breast cases should be carefully watched before the help of a surgeon was sought, he thought practitioners should be entirely guided by the condition of the case at the time. If the case were an early one, or if there were any doubt as to whether it was malignant or not, he thought it was their duty to give the patient the benefit of a thorough course of homeopathic treatment; but if the case was at all an advanced or progressive one, after a month or two's treatment he did not think any hesitation should be shown, because an immense deal could be done with treatment after an operation with much greater hope of preventing recurrence than if an endeavor were made to dissipate the disease in its primary condition.

Dr. Byres Moir inquired whether, in the case in which the ovaries were removed, the cacodylate of soda had been given for any length of time after the operation, because so much depended upon whether the operation effected the cure or the cacodylate of soda.

Dr. Burford replied that cacodylate of soda was given before the operation, but not for long, alternating with thyroïdin. The cacodylate of soda had not prevented the recurrence previous to the operation, but the patient had not received the soaking with cacodylate that she had had since the operation.

Dr. Epps asked how many times the X-rays had been used.

Dr. Madden replied that the patient had the X-rays two or three times a week for months together.

Dr. Epps asked what dose of cacodylate of soda was given.

Dr. Burford replied that the dose was a quarter of a grain three times a day.

*A Case of Breast Tumor.**

Miss D., aged forty-four, first seen October, 1906. She had a swelling in left breast of nearly twenty years' standing. No history of injury. Some pain for two years, but none the last four months. It has been bathed with *phytolacca*, and has decreased during the last two months.

She has slight hemorrhage occasionally from rectum. Has piles. Bowels regular. Catamenia less than formerly. Amenorrhea two months and two years ago.

Examination.—Lump occupies whole of left breast; size of a cricket ball; hard, but very elastic in places; not tender. Nipple very small, slightly retracted; there has been some blood-colored discharge from it, none now. Big gland in axilla.

* Exhibited by Dr. Edwin Neatby.

Father died from operation for lump under arm, "thought to be abscess, found to be tumor."

December 19.—Until three weeks ago some blood-stained discharge had been taking place. Since it stopped, tumor had increased 1 inch in circumference and 1-2 inch in vertical measurement.

Patient feels much better in general health since she began the treatment.

Dr. Neatby said that the case he exhibited was not of the kind to which Dr. Burford had been referring, but he would like to make a remark on Dr. Burford's cases before alluding to his own. In the first place, it was always gratifying to hear of a series of successes in cases of cancer. It was very rare that one could bring forward cases of such a genuine nature where the evidence was so satisfactory both as to the previous nature of the disease and as to the cure, as far as time allowed one to speak of cure. With regard to the use of cacodylate of soda, it was always difficult to allot the precise amount of influence to any one item in the treatment of a case. Cacodylate of soda had failed very often, and it was not known exactly in what cases it was really indicated. He had seen it of very great use in inoperable cases where pain and hemorrhage had been conspicuous. At the same time he had never been able to adduce a case where it was really curative. He desired to subscribe most fully to what Dr. Burford had said, that if a clean sweep could be made it should be done in addition to any treatment, old or new, which had so far been brought forward. With reference to the influence of the removal of the ovaries, at one time great hopes were raised by that treatment. He had performed two cases of the kind, but the patients had both died subsequently. One was published by Mr. Stanley Boyd in a set of cases he collected. He thought the time had come when a good deal of attention should be given to treatment by the neoformans vaccine. He was quite free to say he had not seen a case of his own cured by it, but he had been very much struck by the improvement in several cases which had taken place, and the apparent prolongation of life. If cases could be obtained much earlier than they were, and particularly if they were able to make the growth from the patient's own tissues, the chances of success would be very considerably greater than they were at present. All the cases handed over to medicinal treatment were apparently hopeless cases, and there had been but few cases really cured by the method. At the same time, he felt it was a very encouraging method, and that it was based, as far as it went, on homeopathic principles. His own breast case was not one with any striking features, except the length of time it had been in existence. He believed it was an ordinary case of cystic breast, which had been going on with various ups and downs

for more than twenty years. It had now become of large size and uncomfortable weight, and was definitely increasing. Whether the increase, which amounted to 1 inch in circumference, was due to the retention of secretion or not he could not say. During the time the increase took place, the secretion, which was now escaping again, was retained, and it was therefore possible it might now go down again and get smaller. The patient had been under phytolacca for purely empirical and not for homeopathic reasons, with the result that the general health was better and the tumor smaller.

*Cystic Adenoma of the Breast.**

Cystic adenoma of the left breast in a woman, aged forty-five. The growth had been present several months before coming under treatment, and was growing steadily.

Scirrhinum 3 every second day, and bryonia 1x, had caused diminution in the size of the tumor.

Mr. Dudley Wright did not think the cyst itself had got smaller under the treatment so much as the peripheral part of the cyst, which was possibly made up of inflammatory tissue. As a result of that diminution, the different nodules of the breast were more distinctly felt than they were before.

The president remarked there was nothing commoner than tumors in the breasts of women. They were occasionally seen in men, but it was rare. He had himself cured a case of tumor, which was of a considerable size, in the right breast of a male. He traced it to a vaccinal origin; but, although it had existed for a number of years, it yielded rapidly to treatment by thuja. With regard to the relation of surgery and medicine, his own view was that, with the great powers practitioners had in homeopathic remedies, they ought to attack every case from the physician's point of view first. A very large number of cases yielded to homeopathic medicines, and the patient ought to be given at any rate the benefit of that chance. If homeopathic medicines evidently failed in a case, then was the time to call in the aid of the surgeon, but he did not think it should be regarded as surgical from the beginning. In his opinion Burnett's position was the correct one: "Always try to cure everything." The experience of Dr. Burford with cacodylate of soda, and also his experience in the after-treatment of operative cases, was extremely important. It was a point where homeopaths could score over allopaths straight away. It was the business of homeopaths to do things which allopaths could not do. In the present instance homeopaths could treat constitutional cases after operation, and the sooner the treatment was begun, the better would be the result.

* Exhibited by Mr. Dudley Wright.

*Osteoma of the Upper Maxilla.**

This patient was exhibited as an illustration of an unusual form of overgrowth of the bone. It was the case of a female, aged fifteen. A photograph was shown of an upper jaw, removed by Mr. Wright from a young woman, aged twenty, the subject of a similar complaint. In this latter case the antrum of Highmore was entirely obliterated by the overgrowth, and the mass formed a large projection on the cheek. In the case of the patient now exhibited, the projection of the cheek was less; the whole of the alveolar margin on the right side was affected, and there was slight thickening of the hard palate.

In both cases the growth was unilateral; it was not proposed to do any operation, as the deformity was not very conspicuous.

Fracture Dislocation of the Elbow.†

A case of fracture dislocation of elbow joint (in a girl, aged ten), complicated by injury to the nerves in the vicinity, resulting in rapidly-forming trophic ulcers, marked limitation of movement at elbow joint, atrophy of muscles of forearm and hand with paralysis, and formation of "main-en-griffe."

Has been treated by ordinary fracture methods, partial excision of elbow joint, faradism, galvanism, high frequency current, and massage. Some attempt at improvement (e. g., slight return of sensation and a little more power) after three and a half years.

* Exhibited by Mr. Dudley Wright.

† Exhibited by Dr. C. Granville Hey.



Current Comment.

Nathan Starr, M. D.:

Of the many obstetric emergencies and complications that may arise, few, if any, demand more expeditious, prompt, and well-directed interference than *post-partum hemorrhage*.

Usually the hemorrhage is from the placental site, and is due to a deficiency in the contractility and retractility of the uterine tissue. A firmly contracted womb is a safe one and every effort should be made to secure this condition. As to preventive measures, any dyscrasia in the pregnant woman should be corrected as nearly as possible. A too-precipitate labor should be delayed if possible and a too-protracted one avoided. Particular pains should be taken to prevent the retention of particles of membranes, blood clots, or fragments of placenta. In other words the womb should be completely emptied.

Bearing in mind the responsiveness of the uterine tissue to manipulation, this efficient means of inducing contractions should always be kept in mind, as a timely employment of it will often prevent excessive blood loss, and a routine practice of gently manipulating or kneading the womb through the abdominal walls, immediately after the termination of the second stage of labor and continued through the third and for a while after, will well repay the operator.

If all the requirements of preventive treatment have been met, then more radical measures must be at once resorted to. The source of the hemorrhage should at once be determined. If the womb is soft, relaxed, and flabby you can be reasonably sure that the bleeding is from the placental site. If the womb is contracted and yet the hemorrhage continues, a cervical laceration involving the circular artery may be found, and this of course will have to be treated by suture if the bleeding cannot be controlled by compression. Extensive perineal tears, whether attended by hemorrhage or not, should be repaired at once.

If the hemorrhage is due to uterine inertia, ergot or ergotine or trillium should be given as soon as possible, or ergotine in-

jected hypodermatically; if the contractions are irregular and spasmodic, *cimicifuga* had best be given. Mechanical measures are to be chiefly relied upon, and fortunately mechanical excitation is usually sufficient to overcome the existing uterine inertia or atony. The fundus of the womb should be grasped with one hand and carried well forward and downward, making compressions, while the ends of the fingers of the other hand are pressed firmly against the anterior surface of the cervix when it joins the body of the womb, or this failing, the hand can be introduced within the womb and closed. It should be withdrawn during a contraction, thus avoiding the danger of entrance of air into a uterine sinus.

While employing these measures it would be well to have sterile water or vinegar or both heated to 115° or 120° F., and put in a syringe; and if the first-named measures fail, intrauterine irrigation should be employed. The next expedient would be to pack with sterile gauze. Asepsis should be observed in whatever method employed.

The use of strong styptics or astringents should be and has been almost entirely abandoned, also the use of ice. As soon as the hemorrhage is under control a normal salt injection should be given per rectum and repeated at intervals, or if the symptoms are more urgent the salt solution should be given intravenously. Care should be taken in the administration of cardiac tonics lest heart cramp or spasm be induced.

♦ ♦

George E. Fell, M. D.:

I have found it quite as important to retard, as to expedite the *natural forces in labor*. We must bear in mind that in many cases the natural strait is constricted, that the preliminary pains and influence of the nervous system are but the preparatory methods by which, together with the advancing head, we must consider nature's method of dilatation of the canal, of the tissues forming and subjacent to it.

In the early life of the parturient, these preparatory pains are not so evident or persistent as in the cases bordering on the years closely preceding the menopause. In a primipara, of thirty-nine years (as an illustration), premonitory pain was intense and existed some days before birth, while in a multipara of forty-five years, with last birth some eighteen years

before, the pain was excruciating, and continued at intervals during the last parturient month.

The conservative course in this respect is to interfere, only when the strength and patience of the patient is affected to a certain degree, to be evidenced in each special case, as for instance, in a case for the application of the forceps. When under too great and continuous a strain the patient has given up in despair, is evidently in a state bordering on collapse, we have waited too long. As soon as our judgment informs us that the patient cannot help herself, then it is time to proceed with our active measures. The continued importunity to relieve these pains must be controlled by the factor of probable influence on the result to mother and child. My experience, as a rule, is against the giving of pain inhibitory or relieving medicaments, except when specially required by some condition seriously affecting the welfare of the mother.

Many are the problems we are called upon to solve, where combined knowledge and judgment will fail at times. A mother, whom I had delivered some seventeen years before, brought her now grown daughter to my office. An enlarged abdomen was the cause. The tumor story was repeated. I was uncertain as to diagnosis, but had my opinion and requested them to call in a month. The growth had enlarged; I strongly suspected pregnancy, and so informed the parties. Both were horrified. The daughter said it was "impossible and ridiculous." After another visit, I presumed at the eighth month, I reiterated my opinion. The ninth month neither mother nor daughter put in an appearance.

♦ ♦

Willis Young, M. D.:

In routine *obstetric practice* the lateral-prone position presents many desirable features for the facile management of the woman in the second and third stages of labor. Either the right or left side may be chosen, as seems expedient for light, position of bed, etc. The patient is placed on the side desired, a light pillow placed under the head, the knees drawn sharply up and a pad or large pillow placed between them, the hips projecting well to the edge of the bed. The accoucheur sits alongside the bed with one arm resting lightly on the patient's hips and both hands free to manage carefully every

step of the second and third stages of labor. This posture has the following points of evident superiority over the time-worn ano-dorsal position, viz: Facility with which the vulva may be exposed and progress of extension of head managed, and particularly, freedom from contamination with expressed feces, which latter cannot be prevented in the ano-dorsal position so easily.

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A. P. Heineck, M. D.

I have not the least hesitancy in advocating what I think to be the proper treatment of *ectopic gestation*. I hold that this condition is a disease, a dangerous disease, and that the products of gestation should be regarded as a neoplasm, malignant at that. This state is to be treated not as a pregnancy, but as any other parasitic or malignant growth. Therefore, surgery offers the only reliable method of treatment. The surgeon's art must be instantly invoked after a diagnosis or probable diagnosis has been made. But three questions should be determined before proceeding to operation. 1. Shall the mother be abandoned to nature? 2. Will she live, if operated? 3. Is there less danger in opening the abdominal cavity than may result from the rupture of the gestation sac? It must be borne in mind that an extra-uterine pregnancy always terminates fatally to the child, and frequently to the mother, unless artificially relieved.

The dangers attending the expectant plan of treatment are too obviously dangerous; while the only dangers incident to operative interference in ectopic gestation are those of anesthesia, of hemorrhage, of shock and sepsis. The first is minimal, the second can be minimized, shock can be largely lessened by rapidity in operating. Careful aseptic and antiseptic precautions almost completely eliminate the dangers of sepsis.

Where there is absence of urgent symptoms, we have an operation of necessity. If rupture has occurred, or is taking place, we have an emergency operation. We cannot see through the abdominal wall to determine whether the hemorrhage has ceased or is continuing. The hemorrhage must first be stopped before any other measures are taken. This can be accomplished only by opening the abdomen. Even in the absence of urgent symptoms, the operation must not be delayed, because as long as the fetus lives, the placenta increases, both

in size and vascularity, thus vastly augmenting the dangers of operation.

Operation is not contra-indicated by the coexistence of an intra-uterine pregnancy.

The diagnosis of ectopic gestation is frequently a very difficult matter. But the conditions which simulate it, call for surgical interference and are only amenable to surgical measures. Only in cases of pelvic abscess is the vaginal route to be preferred. While the vaginal route in cases of extra-uterine pregnancy is becoming more and more unpopular, and deservedly so, it should not be entirely abandoned. Many practitioners employ both routes in the same individual, in cases in which either the abdominal route or the vaginal route alone, are insufficient. The abdominal route commends itself to me for the following reasons:

1. It enables one to attend to coexisting pathological conditions at the same time that one removes the ectopic gestation sac.

2. To secure a more complete and more careful hemastasis, since the operative field is much better under control.

3. To arrest the hemorrhage with greater rapidity. In the arrest of hemorrhage, celerity is an important factor.

4. To better judge of the extent of damage; to make a more direct examination; and thereby make a more accurate diagnosis.

5. To make a more conservative ablation of organs. One should never needlessly sacrifice such important organs as the tubes and the ovaries.

6. To get more quickly in contact with the condition and to remove more completely the fetal sac and its contents.

7. To make use of the sense of sight, as well as of that of touch when operating for these conditions.

8. In case a mistake in diagnosis has been made (having made use of the abdominal route) you have ready access to those conditions that simulate extra-uterine pregnancy.

If the opposite tube be the seat of a pyosalpinx, of a hydrosalpinx, of a benign or malignant neoplasm, of an ectopic pregnancy, it is needless to say that we should remove it. If it be the seat of pathological conditions sufficient to warrant its removal, its removal in the presence of ectopic pregnancy is not contra-indicated. There are many able authorities who

favor the opinion that extra-uterine pregnancy shows a tendency to recur, and that as a prophylactic measure the unaffected adnexæ should be removed. I am not able to convince myself that as a general rule such procedure should not meet with energetic condemnation.

The one great difficulty to be encountered in operating for extra-uterine pregnancy is the hemorrhage. These hemorrhages are due to the separation of adhesions and to the removal of the placenta. A very slight "interference" with the placenta may cause a frightful hemorrhage. Hemorrhages occur either at the time of operation or after. Danger from these hemorrhages is the greatest if the fetus is still alive at time of operation or if the fetus has died only recently.

The following causes, among others, are given to explain the severity of the hemorrhages attending the separation of the ectopic placenta :

1. The condition of the placenta, which is still functionally active up to the moment of separating the fetus from it if the fetus be alive.
2. The abnormal characteristics of the placenta itself.
3. The special and ectopic position of the placenta in each individual case.
4. The vascularity of the cyst wall.
5. The non-contractile basis upon which the placenta is located.

The placenta can usually be removed without danger of hemorrhage if the fetus has been dead some time. Those cases in which the placenta has continued to develop in the tube, furnish but slight complexity to the operation.

The placenta, however, has been found adherent in every possible way to every possible organ; to the parietal peritoneum, to the omentum, to the intestines, to the bladder and other intra-abdominal organs.

Immediately before being brought to the operating table, the patient is catheterized. This is done to avoid incising a distended bladder; to remove a confusing element from the operating field. The incision is to one or the other side of the median line. The side selected is determined by the vaginal findings at the time of examination. A firmer cicatrix is thought to be more probable from a side incision. An incision to one side of the median line is better adapted to the method

of suturing the abdominal wall. Avoid cutting the epigastric vessels, and the urachus. Make use of the Trendelenburg position. The patient is gradually and not suddenly placed in this position. After operation, the return to the horizontal position is just as gradual. A thorough examination must be made of the opposite tube and ovary, for there may be evidences of a former or co-existing pregnancy of the opposite tube or ovary; (b) there may be disease of opposite tube or ovary.

A needless sacrifice of tissue or organs is uncalled for. If the opposite tube and ovary be unaffected, they must not be molested.

Normal saline solution must not be given through any channel before the bleeding has been controlled, or the bleeding vessels have been secured. When the bleeding points have been controlled, its use is of signal benefit. Before control of the bleeding has been effected, the normal salt solution by increasing the blood pressure is very liable, by dislodging the internal thrombi, to cause a recurrence of the hemorrhage. The abdomen should not be closed until the operator is absolutely certain of his hemostasis.

If possible, do not denude peritoneal surfaces. Such denuded surfaces offer avenues for the entrance of infection. Lessened formation of adhesions is secured by peritonization: that is, by covering denuded surfaces with peritoneum. It also lessens hemorrhage and forms a barrier useful in limiting the extension of inflammatory processes. I employ a peculiar method of suturing. I use an intra-dermic (a subcuticular stitch) which is continuous and which does not penetrate the upper layers of the skin. The silkworm gut stitches are tied over a piece of gauze extending from the point of entrance to the point of exit of the silkworm gut stitches and fully over the line of incision. The silkworm gut sutures are figure-of-eight sutures introduced after the peritoneal suture; the upper loop of this silkworm gut stitch includes both skin and subcutaneous tissues; the lower loop includes the sheath of the muscular fibers of the rectus. The peritoneal stitch includes peritoneum, properitoneal fat, and transversalis fascia. It is so introduced as to evert the edges of the peritoneum, and the loop of the stitch does not appear in the peritoneal cavity. The fascial stitch of catgut restores the continuity of the sheath of the rectus. Voluminous gauze dressing is used, but

no dusting powder. Zinc oxide adhesive plaster, because of its aseptic qualities, adhesiveness, and non-irritating properties, is used to hold the dressings in place. Perineal straps passing around each thigh prevent the abdominal binder which covers the whole from slipping up.

Now, your great difficulty comes in those cases in which the entire ovum cannot be removed, and the great difficulty lies in the removal of the placenta. Another difficulty is due to the presence of dense adhesions of the cyst wall and also to its vascularity.

There is no disputing the fact that the fetal sac and placenta should be removed completely, if this procedure is consistent with the safety of the mother. The complete ablation of the ovum is theoretically the only perfect operation. It does away with all the subsequent dressing of the case, it does away with the slow and tedious expulsion of the placenta; with the dangers of sepsis that attend this slow elimination of the placenta; it markedly shortens the patient's convalescence, and is far less liable to be followed by post-operative hernia.

The method that we have had occasion to follow in these cases in which we feared to disturb the placenta, is the following: After having incised the sac, we removed the fetus and other intra-ovulatory contents; and ligated the umbilical cord close to its placental implantation, then we resected a portion of the sac wall and we sewed what was left to the abdominal wound. This closes off the general peritoneal cavity. It leaves us a large pouch which we pack with strips of aseptic gauze. Many authors, instead, employ iodoform gauze. We endeavor to keep the cavity of this sac aseptic until all the placenta has sloughed out of the wound. The elimination of the placenta by this method takes from twenty to fifty days.

In some cases, a vaginal drain has to be used in addition to the abdominal drains. The first strips of gauze that are inserted in the fetal sac are made to serve the office of a compress, or a tampon; they are used to check the bleeding. After the first dressings, the gauze strips are used more with drainage in view. After the fetal cyst has been sewed to the abdominal wall or immediately previous, according to the exigencies of the case, the compresses that have been used to protect the general peritoneal cavity are removed. Sewing of the sac

wall to the abdominal wound shuts off all communication between the cyst cavity and the peritoneal cavity. We use catgut No. 3 to suture the remnants of the sac to the abdominal wall. In some cases you will find it necessary to irrigate this pouch during the subsequent dressings with some astringent aseptic or antiseptic solution.

The abdominal wound is closed as in those cases in which a Mickulicz drain is employed.

♦ ♦

A. B. Somer, M. D.:

A little maneuver that I have found helpful in *applying the forceps* at the outlet with the vertex anterior, is to raise the shanks of the blades well up against the symphysis before locking, instead of allowing them to rest on the perineum. In median application of forceps, anterior position, before rotation has taken place, the cephalic application may be made the same as at the outlet, the line of traction being oblique instead of direct. The amount of traction to be made should not exceed eighty pounds and as a rule should be no more than can be exercised with the arms and forearms without bracing. Anything more than this may result in serious injury to either mother or child. Whenever it becomes necessary to apply greater traction than this, either the traction is not properly applied, the posture of the child is abnormal, or some other mode of delivery should be chosen. A vast amount of injury may result from forcibly dragging a fetal head from the maternal pelvis by brute force.

♦ ♦

M. A. Tate, M. D.:

For the last twelve years I have used and at no time regretted adopting the method of *application of the forceps* which I now describe. The right and left blades, when in place, correspond to the right and left side of the pelvis, as in the usual method. The first and second fingers of the left hand are introduced into the vagina directly up to the cervix—not to the side of the pelvic cavity, but directly on the lower median wall of the vagina. The left blade of forceps first to be introduced is held in the right hand and is directed to the os uteri on the fingers of the left hand, which act as a guide to the patulous os. The left blade now slips into the lower uterine cavity, the handle is depressed downwards, taking the

place of fingers of the left hand, and given to an assistant to hold. The right blade, also held in right hand, is introduced into the uterine cavity right on top of the left blade, which takes the place of two fingers in the vagina, and act as a guide to this second blade. The right handle is now depressed to the median line, to the right side of the left handle. Both handles are now in the posterior wall of vagina in its median line, and the blades are in the uterine or vaginal cavity, depending on the case, with the blades flat, the right or second blade on top of the first left blade. The handles are now grasped, the right in the right hand and the left in the left hand, and a turn of about one-fourth of a circle is made, so that the blades come to a position analogous to that if applied by the generally accepted way, namely, to the sides of the pelvis. In the low operation the blades are introduced in the same general manner as in the high, except that the blades only enter the vagina and not the uterus.

The question now may be properly put, wherein can it be claimed that this method is far superior to the long-accepted method of application? In the first place, let it be distinctly understood that, whether you introduce the first or left blade to the side or on the posterior median line of pelvis, it is immaterial as to easiness of application or question of time. The introduction of the second or right blade, however, is a proposition entirely different. Are there any members present, of little or much experience with the application of forceps, who have not had trouble with the introduction of the second blade? The difficulty is to get this right blade past the head into the uterine cavity, for the head is already pushed over to the right side by the presence of a foreign body, namely, the left blade in the uterus. This is where valuable time is wasted in our endeavor to introduce the second blade, and harm done if much force is used. The second or right blade is the bugbear to the introduction of forceps. The experienced and skillful operators have this same difficulty, that here and there they meet with a case where much valuable time is wasted, before they can properly apply this second or right blade.

The claim that I make for this method is that if you can introduce the first or left blade without difficulty, no trouble whatever should be encountered with the application of the second blade. Again, the left and right blades of the forceps

are held in the right hand in introduction, making the operation simpler and easier to accomplish, as most operators are right-handed. In locking the blades do not use force, and see that hair on the labia is not caught in the lock. If the blades do not lock easily, then the forceps are not properly applied to the head of the child, and in such a case it is best to remove one if not both blades, and reapply.



L. T. Gill, M. D.:

Threatened abortion and *hemorrhages from the womb* are frequent occurrences in pregnancy, and our school has well-proven remedies with which no other school's treatment can compare. I am glad to say that time and time again, nothing has so confirmed my belief in homeopathy as the signal success of these remedies.

Bell. 3x: Patient, the fleshy woman. Profuse, bright red blood; flooding and fainting; violent bearing-down pains; palpitation of the heart.

Viburnum op. θ : Cramping pain in the womb and bearing down. More back pain than in belladonna pains, more like her menstrual pain. Less bleeding and more pain than in belladonna, with noticeable contractions of the womb.

Erigeron θ to 3x: Passive hemorrhage from womb with irritation of the bladder and rectum. Slightest movement increases flow. Great pallor and weakness. Use after abortion with diarrhea.

Sabina 3x: Dragging pains from back to loins and pubes. Profuse red bleeding. Feeling of sinking or faintness in abdomen. Threatened abortion in early months.

Secale 3x: Pain not so prominent but with regular yet weak contractions of womb. Threatened abortion in later months. Passive hemorrhage in feeble cachectic patients. Patient pale, thin, sallow, with small pulse and cold hands and feet.

Trillium pen. 3x: Hemorrhages both active and passive. Sensation as if hips and back were breaking to pieces.

Apocynum θ , drop doses: When the hemorrhage occurs monthly at the time of the former menstrual periods.



W. H. Stiles, M. D.:

No one remedy is curative in all cases of *eclampsia*, and the reason for the favorable report of the use of morphine lies

in the fact that in the case opium was the simile. The same applies to veratrum viride, gelsemium, and others. The difficulty of finding the important indications to guide in the selection of the remedy is apparent, since during the seizure the guiding symptoms are masked by the spasms. Usually you are called when the patient is in violent convulsions. To hunt for your "similar" remedy at such a time would be wrong, hence your chloroform or morphine, which we know is palliative and sometimes curative.

But open the flood-gates of all excreting organs. As a start use a high enema of hot salt water, and lots of it; give a saline laxative in hot water every two hours. In the hour between give plain hot water to drink; if the sweating is delayed and the heart is not too weak, give hypodermic injections of pilocarpine, and as soon as the bowels and kidneys become active and the patient is sweating freely, you can feel that you have made a good start.

♦ ♦

Hunter Robb, M. D.:

Even when the ovaries have undergone actual inflammatory changes, or when they are occupied by tumor formations, or are bound down by adhesions so that their functions are interfered with and the necessity of operative procedures becomes imperative, we still have to decide how far we ought to go and how we can get the best results for the patient not only immediately but later on.

From our experience in this line of work for more than seven years we have been able to thoroughly convince ourselves of the great advantages that may be obtained by preserving as far as possible *the integrity of the pelvic organs*.

It is true that in a small percentage of cases (2 to 5 per cent.) after such a line of treatment has been followed, the patient will still have to undergo a second operation before she can be completely relieved of her discomfort, and it is also possible that in a few instances, by the introduction of infection, her condition may be rendered even worse. Such cases, however, in our experience are exceptional. Moreover, a secondary operation is not infrequently necessary in cases in which radical measures have been carried out, hence it is not altogether fair to blame the conservative measures for the second operation. We all have had the experience (in a small

percentage of cases) of separating post-operative adhesions after carrying out radical measures.

Before, however, employing the more conservative procedures we always make it the rule to carefully explain to the patient, or to her friends, that such measures will be undertaken if in our judgment at the time of the operation they seem to be advisable. But we further state, that even though we remove what seems to be the inflammatory area it may later become necessary to institute a secondary operation before relief is obtained. After this very clear statement has been made to the patient, as a rule she is perfectly willing to take a good many chances if there is a reasonable prospect that the conservation of the pelvic organs will be compatible with future health and comfort, and as we have already said, from actual observation we have found that it does not become necessary to perform a secondary operation in more than from 2 to 5 per cent. of all such cases. If an ovary or a portion of an ovary can be saved before the menopause has begun, or even during the time in which the patient is experiencing this change, we have found that not only the immediate convalescence, but also the subsequent condition of the patient is in every way more satisfactory. I am sure that all of us have seen many patients suffer more after than before the removal of diseased ovaries. In many instances their discomfort is due to the artificial change of life that is thus brought about. In some instances they may complain for five years or longer. And unfortunately during this time the addiction to morphine or some other drug habit may be formed in endeavors to relieve their distress. In our opinion the prevention of the artificial menopause is the most important reason for leaving the patient her ovaries whenever this is possible, the question of possible pregnancy following conservative measures being apparently only of secondary importance, as in the majority of these cases the patients are in an unhealthy condition not only for bringing a child into the world, but also for the proper rearing of the same. This criticism, of course, does not usually apply to those cases in which a tumor is present, implicating only one ovary. When the question of pregnancy is to be considered one has to deal with the condition of the fallopian tubes as well as that of the ovaries.

In the light of our experience it is a wise procedure to re-

move the fallopian tube whenever a pyosalpinx exists, i. e., when there are macroscopic evidences of pus. When, however, the ovary is involved in an abscess formation, the same radical treatment is not always indicated, as the abscess in most instances does not involve all of the ovarian stroma. Furthermore, macroscopic examination of many of these ovaries will show that the abscess is walled off, and the ovarian stroma beneath frequently has been invaded only to a slight extent. In such instances the abscess may be excised and the line of incision be brought together with a fine silk or catgut suture. In our series of cases the lateral structures showed macroscopically marked evidences of inflammatory disease, and there were adhesions which bound down the structures. We have only included in this analysis those cases in which we were able to carry out conservative measures, and not those in which we were obliged, on account of the technical difficulties of the operation, to leave the lateral structures on one or both sides, although removal was indicated.

♦ ♦

F. W. Samuel, M. D.:

No subject has engaged the attention of the local surgeon more than *burns*. And the multiplicity of remedies and the character of treatment in the past is most bewildering to the young physicians in looking over this subject from a text-book standpoint. I consider that a burn is a wound, and in order to get the very best results, it should receive the same careful attention that we give to the subject of wounds. The first attention required in burns is to relieve pain, whether it be of a superficial nature and extensive, or whether it be circumscribed and very deep. After relieving pain we should at once proceed to cleansing the part. After trimming away all dead tissues, the surface should be washed and gently scrubbed with gauze or a cotton mop. All foreign bodies should be removed. In burns of a very superficial nature and extensive, where the exudation of serum is expected, the liability of infection is very great. Here sterate of zinc and balsam of peru make a most excellent dressing after thoroughly cleansing the surface. This is then covered with a liberal layer of gauze and cotton. This dressing should be removed in twenty-four hours and thoroughly irrigated. When infection occurs in these cases it is usually due to the *staphylococcus albus*. The application of pure

carbolic acid in these cases, as a dressing, possibly owes its good effect to the germicidal effect. If it should occur in the wake of such a burn it has been my rule to use it in a strong solution. In all burns where necrosis is a feature, the daily removal of necrotic tissue is in order to avoid contamination of the rapidly healthy forming granulation tissues. I regard it as a mistake to allow the first dressing to remain upon a burn until separation takes place.

♦ ♦

Samuel E. Earp, M. D. :

Not a great while ago it was a common belief that the appearance of *albumin in the urine* of pregnant women was the signal for alarm. Within a few months I heard it asserted during a discussion before a prominent medical society that albumin in the urine indicated that there were breakers ahead and that prompt treatment should be inaugurated. I have examined the urine of pregnant women and found albumin and was led to believe that the treatment adopted by me prevented eclampsia. On the other hand I do know that women have gone through a normal labor and yet previously an examination of the urine showed albumin in abundance and still no treatment was responsible for the favorable termination of labor.

While the urine may contain sugar or albumin it does not necessarily mean that there is in every instance cause for alarm. It is not best, however, to take the position that an albuminous urine may not mean danger.

I noticed in the proceedings of the Medical Association of New York Dr. F. E. Sondern read a paper upon "The Urine of Pregnancy" which contained some valuable information upon the subject to which I have referred.

It has been shown that a large per cent. of pregnant women have albumin in the urine and still there are no ill results. It would seem that we have all taken too much for granted and have not examined every case carefully.

The obstetrician should always be familiar with the case and should know perfectly the conditions relating to the secretions and excretions of the body. Since neglect may possibly mean that the danger line has been crossed unconsciously.

Dr. Sondern's paper brings out some points which are worthy of note. He says: "Recent advances in the chemical investigation of the urine in pregnancy have resulted in new

data of value to the obstetrician, as an aid in his work and in the correction or, more properly speaking, modification of views previously held. As in general medicine, the presence of albumin, alone or associated with casts, was no longer the bugbear it formerly had been, as we now knew that it did not necessarily mean an inflammatory lesion of the kidney. In comparatively slight disturbances in the circulation or the innervation of the organ or in the quality of its blood supply, it might, in consequence of the derangement of its function resulting, pass larger or smaller amounts of albumin with or without casts. Recent investigation has shown that in approximately fifty per cent. of pregnant women albumin appeared in the urine at some time during pregnancy. The numerous possible causes of albuminuria made the diagnosis by no means an easy matter, and the apparently physiological retention of nitrogen toward the close of uterogestation added another difficulty. Laboratory research indicated a diagnosis only in the severe cases of true nephritis, but in those of a mild type, or when there was merely a disturbance of function, the analysis of the urine was simply an aid. It might, however, disclose evidence of a possible causative factor of such disturbance. While the periodical examination of the urine in pregnancy for specific gravity, albumin, sugar, and casts, no longer met the exacting demands of present-day diagnostic methods, on the other hand, no specified change from the normal in any respect could be accepted as a prime indicator for drastic therapeutic measures or operative procedure, though oftentimes a material help in concluding the existing necessity for such.

"The demonstration in general that what was known as intestinal autointoxication was a cause of a distinct train of symptoms, and often explained other obscure manifestations, was now a recognized fact. When it was recalled with what facility disturbances of the gastro-intestinal tract were occasioned in pregnancy, and that the experience that intestinal autointoxication frequently seemed to be the forerunner of the toxemia of pregnancy, if not more closely allied in the etiology, the necessity for early diagnosis of this condition was evident. The laboratory aid in such diagnosis was important, and its main feature was the recognition of a relative excess of ether-eal sulphates in the urine. In the pyelitis of pregnancy the urine presented the same typical picture noted in pyelitis in

general, with the almost invariable presence of a decided bacteriuria, which on investigation, was usually found to be due to bacilli of the colon group. Transitory glycosuria was not worthy of special note, except that it frequently accompanied other faulty metabolism which might demand attention. In women suffering from regular diabetes approaching parturition it called for the same attention as a contemplated surgical procedure, and this should be directed toward the avoidance of an acidosis, rather than solely to the reduction in the amount of glucose excreted.

"The comparatively recently expounded belief that some of the minor, as well as major, disturbances in pregnancy were the result of toxemia had necessitated a reclassification (still in a somewhat unsettled state) of these disorders by the clinician, and had likewise led to a diligent search for the actual causative factors, with no practical result as yet. The urine was looked to for the purpose of finding the causative toxine itself, or evidences which would indicate the existence of an accompanying faulty metabolism. While, as stated, the search for the actual causative element had as yet been ineffectual, the evidences of an accompanying faulty metabolism had been found." Having discussed this point more fully, Dr. Sondern went on to say that continued experience in the analytical work in connection with these cases seemed to point to the practical conclusion that the routine examination of pregnant women's urine should include a search for evidences of faulty intestinal metabolism, so that this apparently predisposing factor might receive early attention.

♦ ♦

John F. Winn, M. D.:

To promote *diaphoresis in the toxemia of pregnancy* I prefer the hot-air bath to the hot pack. The objection to the latter is the difficulty of knowing whether the moisture on the skin is due to the relaxation from the heat or from the steam of the wet blanket. The hot-air bath can be secured in a few minutes by the use of a section of stove pipe with an angle placed over a good lamp, the heat being conducted under the bed clothing, which is well pinned down to the bed. Care must be exercised, however, in using the hot-air bath, for its prolonged use may cause great depression.

M. U. O'Sullivan, M. D.:

Perhaps the most common of the *causes of ill-health in women* is the prevention of conception. Nor does this occur only in the case of the unmarried, where (however reprehensible) it has the excuse of the avoidance of shame of motherhood and illegitimacy. It is even commoner among the married—most prevalent of all among the well-to-do married, where only far baser pleas can be urged in defense.

Heron, in a recent investigation (1906), finds that the great diminution in fertility in wives during the last fifty years has been almost entirely among the better classes living in the best sanitary surroundings—the very class capable of begetting the most desirable citizens. Incidentally, he rejects the explanation of delayed marriage in the upper classes as a solution of the problem. Webb expresses similar opinions. He eliminates bad sanitary conditions from the list of causes of decline in birth rate, points out that in the most thrifty classes the birth rate has fallen off 46 per cent. in the last decade, and states his absolute conviction that the decline which annually robs a country of one-fifth of her “normal crop of babies” is “entirely the result of deliberate prevention on the part of the parents.”

This detestable practice is the outcome of varying causes. It may come from fashion, cowardice, or shiftless poverty; it comes from the aimless diletantism of women who will not mar their beauty, or disturb the patrician pleasures with the cares of maternity; it comes from too high a standard of living, which creates many artificial wants and demands many expensive luxuries.

Why is it, I ask, that so many women under forty-five are sick or sickly? Why do so many women break down during child-bearing life? The answer is plain: It is because numbers of them, false to their moral and physical obligations, are doing all they can to have no children or to limit their number. It is because the wife, forgetful of the duties she owes to her state of life, prevents conception, or seeks an illicit and dangerous deliverance from the consequences; or, again, it is because want of knowledge has made her the victim of venereal infection, that women suffer so much.

There is another aspect of this threefold evil to which, at

first blush, it may seem out of place for me to allude; but my excuse is that health and happiness are so inseparably blended that what hurts the one injures the other.

It is much to be regretted that divorces and disrupted households are multiplying in this fair land to a degree which must excite the alarm of every patriot and philanthropist. Now, what is the real explanation of these unhappy homes? What means this domestic infelicity, those ill-mated marriages? I reply, they are the natural outcome of the violation of one of nature's immutable laws. The causes are clear enough; sex cannot be ignored. It is a profound fact, which underlies all the relations of life and permeates the whole fabric of society.

The love interchanged between man and woman is no mere operation of the mind; no simple, intellectual process. The conjugal relation is twofold in its nature; it has a moral as well as a physical expression, the two so interwoven that it is impossible to dissociate the one from the other without doing moral, as well as physical harm. The grossness of the physical or carnal union is redeemed by its purpose—the moral union, in which is incorporated the desire for offspring.

Strip the marriage tie of these qualities, take away the family idea, and it at once loses its cohesiveness as well as its dignity. For the bond constituted by children between man and wife should not be forgotten. Hopeless disruptions are less likely to occur in a home where the potential antagonists are at least united in a common love for their little ones, and regard for their welfare. Moreover, the care of her children is a woman's natural outlet for energy and affection.

But when a wife defiles the marriage-bed with the devices and equipment of the brothel and interferes with nature's mandate by cold-blooded preventives and safeguards; when she consults her almanac, and refuses to admit the approaches of her husband except at stated times; when a wife behaves in so unwifely and unnatural a manner, can it be otherwise than that estrangements and painful suspicions of faithlessness should from time to time occur? Can a home with such an environment be a happy one? Many husbands so situated are, I fear, tempted to seek elsewhere the pleasures denied them at home. Such are nature's reprisals; such, indeed, her unfailing retributions. ♣

No doubt, more rarely, prevention takes place by the husband's desire; but, in the great majority of cases, it is by the wife's own will that she is thus childless, the husband's guilt in the diminishing fertility of our race being displayed rather in those involuntary cases of sterility due to his own disease, or to his infection of an innocent wife with the fruits of his premarital incontinence.

Ill-health and childlessness in our women are sources of national weakness which every lover of his country must deplore; year by year our birth-rate falls.

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L. T. Gill, M. D.:

Of all the valuable *remedies for the pregnant patient* I have not yet found one more generally useful than cimicifuga. Cimicifuga, acting through the brain and spinal cord, affects directly the nervous and muscular systems and with these properties it has a particular action on the female generative organs. This remedy prepares a woman for the approaching confinement and relieves very many of the annoyances incident to pregnancy, but chiefly when the nervous more than the vascular systems are at fault.

It is indicated in many mental derangements—mania, melancholy, and grief, a fear that she will not survive the confinement; in chorea, hysteria, hysterical convulsions. It is the very best remedy I have found for the neuralgic pains anywhere and everywhere as they are so often found; nausea and vomiting when traceable in a sympathetic way to the growing womb and impingement on surrounding nerve trunks.

If there is any remedy that will best prepare for and render easy labor it is *actea racemosa*. It does so because it cures the reflex nervous symptoms of uterine cause. Important first, is its action on the mind, then the nerve forces, and lastly, so important at the end of pregnancy, it seems to have prepared the muscles in that condition most suited to normal or even a very easy confinement. In giving cimicifuga, where I have a history of a former very difficult labor, I give drop doses of θ daily, commencing from the fifth to the seventh month, and two weeks previous to confinement give five-drop doses daily. For the other symptoms, from time to time, during pregnancy I have used 2x or 3x usually in tablets. Time and experience may yet show me a better dose of this valuable remedy.

Nux vom.—It is one of our commonest remedies, yet no remedy is perhaps more often neglected in these cases. I use 0, 3x, 12x, and 30x.

Pregnancy affords no certain immunity from the ordinary diseases. A woman while pregnant may have any of these. But the utmost should be done to shorten that disease, not only for the sake of the mother but that there may not be a premature birth, or that the child may not forever have a enfeebled constitution from malnutrition during intra-uterine life. In these cases we, as a school, have a great advantage over those of other schools, whose remedies in their crude form are not suited to the peculiar state of a pregnant woman sick with perhaps also an infectious disease. Should any mistake in prescription be made the results might be disastrous to the pregnancy, or at any rate I believe if a crude drug does no good it must do harm; while with our remedies no such bad results could possibly occur.



C. T. Souther, M. D.:

There are a few broad general rules respecting the drainage of *suppurative abdominal cases* which are well worthy of careful study.

1. All drainage should be put in wet or moist, and will continue to pull out the discharge only as long as it remains moist.

2. The dressings around the drainage should be moist.

3. In suppurative abdominal cases there is rarely any hurry about removing the first drainage as I have frequently seen the original drainage in for five to ten days, and one case thirteen days. Fresh dressings should be applied as often as is necessary to keep the patient clean and comfortable.

The abdominal cavity will expel drainage after a time without any effort on the part of the physician, but I do not think we should wait for this, as it requires more time, and nothing is gained.

By premature removal of large gauze drainage and exposing large abraded bleeding surfaces, we only open up the avenues of reinfection, and frequently do harm. Drainage that drains should preferably be left *in situ* until it is thoroughly soft, and not adherent to the walls of the cavity. This

varies with different cases and pathological conditions from forty-eight hours to several days.

When drainage is wrapped with rubber tissue it can be removed very readily, and at an earlier date than gauze put in plain.

Wherever possible drainage should be about the same size from one end to the other, and not have a large wad deep in the belly and a small tag hanging out. Observance of this rule facilitates removal and replacing without pain, and keeps the wound of exit open wide.

We must remember that in most cases nature has made the best possible barrier in the pyogenic membrane surrounding the pus cavity, and we only need an outlet that is not allowed to close until this membrane takes on, or attains, a state near the normal.

Irrigation is of doubtful benefit in many cases, and antiseptics should be used only to protect the skin surfaces from excoriation or infection.

I think a good rule is never to put peroxide of hydrogen into any cavity in any strength, unless we want to retard the repair, and many times do harm. Copious irrigation of normal salt solution at a temperature of 110° to 120°, can be used later in the case, and will do good many times.

If we find upon examining the dressings that there is evidences of fecal fistula, do not remove the drainage for several days, unless there is distention or obstruction.

When the wall of the bowel is so necrotic as to perforate, keep the parts quiet, and do not plow up any raw surfaces by removing the drainage. Nature will do most all here, if time is allowed her, and the fistulæ will usually close in from ten days to three weeks, and no secondary operation will be necessary. The incision will granulate, even though bathed in feces, and as proof of this we need only watch a case of colostomy for inoperable cancer of the rectum.

An incision two inches long may be left open, and the intestines will not protrude, or get out by the side of the drainage, even though the Fowler position is made use of.

Placing of secondary drainage, or repacking, is a very important feature of the after-care, and here I favor the extreme simplicity of technique, which I used in fifty cases while in hospital service, and in all such cases since, not only in abdom-

inal, but in suppuration of the soft parts anywhere. The method grows in favor with extended use.

No instruments of any kind are necessary, only the hands, and they can as well be rubber-gloved. I refer to the cotton tent or cigarette drain of any desired size or length, and if desirable can be covered with rubber tissue, but this I do not use ordinarily. Take ordinary sterile cotton in rolls, and cut in squares three or five inches, immerse in 1-4000 bichloride and wring out flat, then split the pad to any desired thickness you want and roll up very tight; this makes a cotton tent that can be readily inserted to any depth, and does not injure the bowel, produces perfect drainage, can always be readily removed without difficulty, and keeps the incision open beautifully. This tent can be changed as often as necessary, has some antiseptic power, is seldom painful at all to adjust, there is no danger of puncturing a necrotic bowel, it can be used to mop out a deep cavity better than gauze, and simplifies matters in more ways than can be appreciated until it has been used in a number of cases.

Translations.

Eclampsia.—A. Sippel makes a new suggestion with regard to the treatment of severe forms of eclampsia (Berl. klin. Woch.). Eclampsia is a condition of which we know little. There are, however, a few facts which are certain. It must be caused by a poison which is produced in the body of the pregnant woman, since if it were an exogenous poison, either derived from some substance introduced directly from without, or from some bacterium, the clinical course would be quite different. Then one can be sure that the poison depends on the pregnancy. It is not known what the nature of the poison is, nor whether it is normally formed in every pregnancy, and is only prevented from being excreted by some means or other in certain cases, or whether it is produced pathologically in eclampsia. Treatment apart from purely symptomatic treatment must be directed toward the removal of the causal agent, that is, terminating the pregnancy, and in removing the causal agent in the secondary sense, that is, getting rid of the poison which is being accumulated in the body and circulating in the blood. The termination of the pregnancy is gaining ground rapidly, and he does not deal with the methods in this place. But at times this either does not succeed in saving the patient

alone, because there is too much poison still in the body, or because it cannot be carried out rapidly enough. By increasing the activity of the skin, intestine, and kidneys, and by supplying fluid in large quantities in various ways, the poison can be diluted and got rid of. Sippel is convinced that many patients can be saved in this way. Still, some will not react to even this form of treatment. He believes that in those cases, in which death occurs in spite of all endeavors, if the renal activity can be raised the matter will have a different complexion. The changes found in the kidneys of such patients suggest that either a retention of urine has taken place or that increased arterial supply has caused the swelling. The retention may be due either to blockage in the ureters or an obstruction of the veins. Stasis in the ureters and veins no doubt plays an etiological part in the disease. Apart from this, a direct toxic action on the organ may assist in producing the congestive enlargement of the kidney. The enormous dilatation of the veins during a convulsion may be regarded as an index of the stasis in the renal veins. It may be accepted that the anuria is caused by a venous or ureteral distention with consequent stasis, and the condition is kept up by pressure on these tubes, either by the pelvic contents or by the convulsive contractions. As a result, a rise of intracapsular pressure is produced. It has been shown that division of the capsule of the kidney in nephritis and other renal conditions leads to improved circulation, and consequently to increased output of urine.

His suggestion is, therefore, to divide the capsule of the kidneys of patients who continue to have convulsions after delivery. The operation appears to have been carried out four times for eclampsia. The first operation was performed before he made the suggestion, but he was unaware of the case. The others were performed subsequently. All four did well. He objects to the attempt to treat the disease by the operation without delivery, since the anuria might recur. He regards the reasoning as logical, and hopes that it will be carried out in bad cases after delivery.

Ovarian Pregnancy: Rupture.—Herrenschmidt and Rigalot-Simamot (*Ann. de Gyn. et d'Obst.*,) report a case from M. Routier's wards. The patient was twenty-five, and had never been pregnant nor subject to any disease of the genito-urinary tract. In November, 1905, she suffered from abdominal pains with vomiting for a week, and there was a discharge of blood between periods, which had never occurred before. The pains and irregular show disappeared and the catamenia returned regularly, the last being seen on January 27, 1906. On February 10th the patient felt a little pain in the hypogastrium. Next morning, when at work, the pain returned, with cold sweats, vertigo, and faintness, and, as all the symptoms grew worse,

in the course of a few hours she was sent to hospital. The physical and clinical symptoms of internal hemorrhage were evident, and right tubal pregnancy was diagnosed, as there was very marked tenderness in the right fornix. On opening the abdominal cavity nearly two pints of liquid blood with some clots was discovered. The right fallopian tube was quite normal. The right ovary was not enlarged, but a small area of ulceration was detected on its surface, and from that area blood issued drop by drop without intermission. In drawing up the ovary a certain amount of pressure on its surface was unavoidable; unfortunately the pressure caused a small body of the size of a pea to be shot out of the ovary at the point of ulceration and lost. The right ovary was removed with its tube. Saline injections and stimulants were needed for two days, but the patient recovered. The period recurred forty days after the operation. The ovary was carefully examined and the appearances are described in full by the authors. Chorionic villi and syncytial masses were detected in the ovarian tissues around the ulcerated, or more correctly speaking the lacerated, points on its surface. An organized clot adherent to the laceration contained cells of decidual and chorio-ectodermic origin. Thus, the ovary was the primary seat of an ectopic gestation.

Primary Cancer of Fallopian Tube.—Orthmann (*Zeitschr. f. Geb. u. Gyn.*) has succeeded in collecting 84 authentic cases, adding 2 hitherto unreported. Besides, he notes that at least 11, if not more, instances of chorion-epithelioma of the tube have been recorded, mostly by Risel. There appear to be only 5 satisfactory instances of sarcoma. Amongst the 84 cases of true primary cancer 2 were probably, and 2 more possibly, "mixed," bearing sarcomatous elements. In 10 cases, including 1 described for the first time in this monograph, the cancer developed within the tubal portion of a tubo-ovarian cyst, and in only 1 of these cases was the disease bilateral. Primary cancer in a sactosalpinx is relatively common. The development of cancer in a tubo-ovarian cyst or in a sactosalpinx, both being products of chronic inflammation, supports Sängers theory that the cancer originated from mucosa already damaged by inflammatory changes. Secondary malignant diseases are much more frequently derived from ovarian than from uterine cancer. The presence of a tubo-ovarian cyst certainly favors invasion of the tube by cancer when the ovary is the seat of primary disease, but, as a rule, its seat is in the tube. Orthmann shows, on direct evidence, that cancerous elements from the ovary may either reach the tube through its serous coat (this is the rule), through its muscular wall, advancing along the mesosalpinx, or through the mucosa at the ostium.

Drainage in Uterine Surgery.—Pauchet (Arch. Prov. de Chir.), in considering how the surgeon should drain the lower pelvic cavity after operations on the uterus and its annexes, lays down the following rules: (1) After septic laparotomies and hysterectomies for cancer, it is possible and necessary to drain by the vagina; (2) after aseptic or but slightly septic laparotomies, the surgeon should always establish supra-pubic drainage; (3) wicks or gauze should be employed as draining agents in cases of threatening or declared infection, or when the wounded soft parts of the pelvic cavity cannot be completely protected by peritoneum; (4) in all other cases the stiff rubber tube should be preferred; (5) drainage should not be effected at the line of suture of the external wound but by a small counter opening; (6) aspiration should always be combined with drainage.

False Perforations of the Uterus.—Bovis (La Semaine Médicale) has discussed in detail the various reasons which have been given to explain how it is that in intrauterine operations where the sound or curette is employed these instruments sometimes penetrate into the cavity of the uterus to an abnormal depth, giving one the impression that the uterus has been perforated by the use of such instruments, this, however, not being the case. For example, during a curettage one may suddenly find the instrument enter to an unexpected depth without meeting with the least sensation of resistance; on withdrawing the instrument and again introducing it one is somewhat surprised to find that the uterus is quite intact and there is no perforation. Again, during a curettage one may feel that suddenly the uterine wall seems to be wanting beneath the curette; re-examination, however, shows that there is no perforation of the uterus.

Of the various explanations given to account for these misleading sensations, the most recent is that which supposes that the uterine muscle is relaxed. Courant and Odebrecht, however, consider that there are no anatomical or physiological grounds for this theory, and Odebrecht considers such relaxation of a non-puerperal uterus impossible.

According to the author, however, dilatation of the uterine neck of a puerperal or non-puerperal uterus may cause a kind of ballooning of the body of the uterus and so allow a sound to penetrate to an apparently abnormal depth. Other factors which may help in bringing about relaxation of the uterine muscle and "ballooning" of the uterine cavity are narcosis and the production of an intra-abdominal negative pressure when the patients are in the genu-pectoral or Trendelenburg position.

Another explanation which has been given to explain these

pseudo-perforations of the uterus is that the sound really enters the orifice of one of the fallopian tubes when it appears to enter to an abnormal depth, and to the author's knowledge this has in six cases almost certainly occurred. He mentions the case of a woman with a myoma of the uterus: on passage of the sound it was thought that the instrument entered one of the fallopian tubes; in a subsequent laparotomy on this woman when the abdomen was opened and the uterus exposed, on passing the sound it was found to enter one of the fallopian tubes with ease, and the author thinks that this explanation is certainly one which cannot be denied in accounting for some pseudo-uterine perforations. Of rare conditions giving rise to the sensation of uterine perforation, may be mentioned the stopping of the point of the sound by its impinging against a submucous fibroid—if the sound be withdrawn slightly and again directed further, it will enter the cavity of the enlarged uterus and lead one to suppose that the uterus has been perforated; the existence of a bipartite uterus; the rupture of the fetal bag of membranes; and the penetration of the sound into a small cavity developed in the interior of a myoma. The author then considers the means of arriving at a diagnosis as to the actual explanation of these pseudo-uterine perforations. If the sound pass into a tube, it takes a lateral direction, very little or no bleeding occurs, the point of the sound can sometimes be felt per abdomen slightly lateral to the median line, and the sound can be passed into the same place several times in succession. If the uterine cavity has been thought to be ballooned, one must leave the sound in and watch for a uterine contraction; the diagnosis of such a condition, however, appears to be very difficult, and the signs very uncertain.

Suprahyoid Pharyngotomy.—Von Hacker (Zentralbl. f. Chir.) publishes a case of transverse pharyngotomy above the hyoid bone practiced for the removal of a round-celled sarcoma of the root of the tongue. In his comment on this case, in which, it is asserted, the pharynx was for the first time exposed in this way on the living subject for the removal of disease, the author states that in 1895 Feremitsch of Moscow was led by his observation of the very favorable course of a suicidal cut-throat, in which the wound had been made above the hyoid bone, to recommend suprahyoid pharyngotomy in place of the usual infrahyoid method. The advantages claimed for the former method are increased space and freer access to the root of the tongue, and above all safety from injury during the operation of the laryngeal nerves and the epiglottis. In the author's case, after tracheotomy had been practiced, a transverse incision was made between the anterior borders of the sterno-mastoid muscles; both lingual arteries

were ligatured outside the cornua of the hyoid bone, and the muscles at the floor of the mouth were divided. The access to the root of the tongue and the posterior and upper parts of the pharynx was found to be very free, and the tumor, which, it is stated, was a fairly large one, was, with a portion of the epiglottis involved in the disease, removed without difficulty by the thermo-cautery. The wound healed by primary intention, and the immediate results of the operation were favorable, but on the tenth day the patient, who was a weak and emaciated man aged sixty-three, died from hypostatic pneumonia and cardiac failure. The prognosis of this method of pharyngotomy, which is recommended as simple and easy in regard to its technique, and as promising speedy healing, would, the author thinks, be improved in future by rejecting tracheotomy and by trusting solely to local anesthesia.

Post-partum Embolism.—Triboulet (La Clin.) says the size of an embolus ranges from that of the large clot which obliterates the internal saphenous artery and possibly also the iliac, and which is liable to be detached suddenly, to a fine dust of thrombi, which circulates in the blood stream more often than is supposed, and which, if it is aseptic or of minimum toxicity, does not disturb the course of the circulation. Capillary emboli are anatomical but have no clinical significance. With regard to the large emboli, their diagnosis, risks, and treatment are well known, and the presence of phlebitis makes it possible to give timely warning; but there is another clinical form of embolus which cannot be foreseen, and which has the character of being relatively harmless. He quotes two cases: one had been confined ten days and the other twenty days previously. Both of them were perfectly quiet, when, either spontaneously or as the result of a sudden movement, they experienced a sudden pain in the right side with a sensation of tearing and the symptoms of syncope. There was extreme pallor, orthopnea, working of the *alæ nasi*, and dryness of the mouth and lips. The pallor and dyspnea persisted for some hours. Auscultation revealed a little weakness or irregularity of the vesicular murmur, followed on the next day by some friction or *râles*; there was some edema or congestion, and a blood-stained expectoration demonstrated that a pulmonary hemorrhage had occurred. The first patient was confined for the third time. Her progress was normal until the attack supervened without any warning. It was diagnosed as pleurodynia until the appearance of blood in the sputum. In the second case the attack occurred on the twenty-second day, the patient having been up for two days; at the moment, however, she was quietly in bed. In neither case was there any phlebitis, any infection, or any failure in post-partum treat-

ment and care; but the first was markedly anemic, and it is possible that thrombus existed before the confinement and the consequent uterine lesions. For treatment rest should be ordered, and a sedative or injection of morphine be given where the mother is not nursing her infant. In all cases it is well to restrict the movements involved by toilet and hygienic cares, and to reduce the diet and give a small dose of castor oil. Lactation need not be discontinued; in favorable cases convalescence is established in a few days.

Uterine Hemorrhage at Puberty.—Fischer (Zentralbl. f. Gynäk.) recently reported before a medical society two cases of dangerous hemorrhages, and some less severe instances of metrorrhagia at puberty. The first patient was twelve years old, and the first period lasted for a week, at the end of which time Fischer was consulted. Drugs proved useless, so the uterine mucosa was scraped off. Under the microscope it appeared normal, but poor in glandular structure. The child had nearly bled to death during an attack of epistaxis when five years old, and large ecchymoses developed after slight injuries. Bleeding from the gums had been noted for two years before the metrorrhagia. Fischer considered that in this case, still under his observation, hemophilia accounted for the bleeding. The second patient was fifteen years old. She had suffered from metrorrhagia for six weeks, and the skin of the trunk and extremities was covered with petechiæ. The curette was applied, but the girl died a fortnight later from epistaxis. Fischer attributed her death to purpura. He further reported 12 cases of severe metrorrhagia in girls between twelve and seventeen years of age. In all there was no other evidence of pelvic disease, in 11 there was no constitutional disease, but one girl, aged fourteen, was diabetic. In 3 cases the girls' mothers gave a history of menorrhagia in themselves or their sisters. All the 12 girls were subject to constipation, and 2 at least masturbated. Professor Schauta, in discussing Dr. Fischer's paper, stated that he had treated many cases of severe hemorrhage at puberty. He did not consider that this affection was a form of hemophilia. Menorrhagia early in puberty was very common; chlorosis, anemia, and tuberculosis, causes of local hemorrhage, and also epistaxis itself, attacked a countless number of children and girls yet the great majority were cured spontaneously, or at least did not succumb to the bleeding; on the other hand, Shauta observed, hemophilia was a very rare disease, and most intractable.

Total Procidencia in a Girl Aged Sixteen.—Sutter (Monatsschr. f. Geb. u. Gyn.) reports this condition in a patient whom he examined when she was over eighteen years of age, subject to procidentia complicated by gonorrhea. Three years

previously she had strained herself moving furniture, and noticed a projection in front of the anus. One year later all the parts seemed to come out of the vulvar orifice. The prolapse ultimately became irreducible. When examined by Sutter the patient, then in domestic service, was anemic and somewhat emaciated. There were evident signs of chronic gonorrhea. A mass bearing all the characters of a total procidentia protruded from the vulva; the cervix had become ulcerated, as usual. The round ligaments and ovaries could readily be defined through the prolapsed vaginal walls. The entire mass was easily reduced, but immediately the pressure was removed it descended again, the posterior vaginal wall coming first. The uterus was very small, and there was but little pubic hair. Sutter amputated the hypertrophied portio and performed anterior colporrhaphy, and also shortened the round ligaments to the extent of nearly six inches by Alexander's operation, opening the peritoneum. Yet the posterior wall began to descend a month later, although the patient had been carefully nursed and undergone an operation for strumous cervical glands in the meanwhile. Sutter undertook a posterior colporrhaphy, and strengthened the perineum by a plastic operation. The patient was discharged cured, but no after-history is reported. Sutter refers to O'Callaghan's case, and Mirabeau, in a discussion on Sutter's report, mentioned an operation on a girl between seventeen and eighteen, recently delivered. She had been pregnant, and was employed in a butcher's shop, often lifting heavy pieces of meat. During labor the os presented in front of the prolapsed vagina. Believing that in the course of involution the procidentia might be spontaneously cured, Mirabeau applied a pessary on the seventh day of the puerperium, but it could not be retained, as there was marked cystocele. He performed a plastic operation to cure the prolapse of the bladder without removing much of the vaginal wall. There was no congenital anomaly in that instance; on the contrary, the patient was strong and well-developed, and the labor had been normal, notwithstanding the prolapse. That condition, in Mirabeau's opinion, was of purely traumatic origin, due in part to lifting weights. Wiener observed that, when an assistant in country practice, he saw a good long series of cases of prolapse in girls. The patients were in every instance of the peasant class, accustomed to hard manual labor. He always performed anterior and posterior colporrhaphy, and declared that he had never seen a failure. Stumpf remarked that, as prolapse has been observed in the newborn child, it certainly might have been of congenital origin in some of the reported cases which occurred in girls.

The Diagnosis of Pregnancy in the Second Month.—Rudaux (La Clin.) discusses the importance of recognizing early

pregnancy, since patients may require to know where conception has occurred, or it may be necessary to diagnose a pregnancy which the patient would desire to hide. Such diagnosis is not always easy, based as it is upon objective symptoms, or complicated by nervousness or obesity. The information obtained from a patient is not always reliable, and the main importance lies in the physical examination. A history of suppression of the menses, of digestive or nervous troubles, and of increase of the mammæ or of the abdomen, is of little value unless confirmed by changes in the uterus. Palpation in the suprapubic region when successful will discover a tumor lying in the middle line and rising above the margin of the symphysis at the end of the second month. In the third month the tumor is about 7 cm. above this point. The only really reliable method of examination is per vaginam. The index, or, where possible, the index and middle fingers, are introduced into the vagina, and the cervix is reached; it is generally softened, which is not definitely diagnostic. When bimanual examination is made with one hand in the vagina and one over the symphysis it is possible to distinguish the tumor. If this is then moved by the external hand from side to side the movement can be felt by the hand in the vagina. With a little external pressure the uterus can be palpated between the two hands, and the globular form and increase in size are felt; it is also soft, and the surrounding tissues are infiltrated and edematous. If in addition to these physical signs the patient has missed two monthly periods and experienced some of the early symptoms of pregnancy, it is safe to consider that conception has occurred. Objective signs are only useful as corroboration of the examination. A loss at every menstrual period does not exclude pregnancy, but calls for particular inquiry into the nature and character of such losses. Occasionally one is misled by finding the uterus retroflexed.

Interstitial Tubal Gestation.—Strobach (Zentralbl. f. Gynäk.) reports a case where the symptoms were relatively chronic. The patient was a strong woman, thirty years of age, who had been married five years, and had within that space of time been four times pregnant. After January 26th last, the period ceased. The patient remained in good health until the beginning of March, when attacks of crampy pains in the left side set in, with vomiting and syncope. The pain and sickness continued and made the patient very miserable and quite unfit for her duties. For three weeks this condition went on, till when Strobach attended her on March 26th, she was reduced to extreme debility, with a very rapid pulse and normal temperature. The abdominal walls were very thin, so that the outline of a tumor of the size of a fist could clearly be defined

in the left iliac fossa. The uterus was connected with the swelling; it was enlarged and firm. Tubal pregnancy was diagnosed, and the curette was used, in order to make sure about the contents of the uterine cavity and to avoid the possibility of hemorrhage from separation of a decidua. As suspected, the instrument brought away decidual tissue in considerable quantities. On opening the abdominal cavity no adhesions were found, and only a moderate amount of free clot. A two months embryo, enclosed in unruptured membranes, was seen protruding from a rupture in the sac, which proved to be interstitial, the round ligament lying external to the sac, whence proceeded the left fallopian tube entire. During manipulation the fetal sac was delivered, the chorion following spontaneously, as though expelled from the sac by pains. The sac was extirpated, the wound in the uterus closed by deep and superficial catgut sutures, and the left tube sewed on to the line of suture on the uterus. The right tube was normal, but Strobach removed it, as he wished to avoid the chances of uterine pregnancy, which would be associated with great risk of rupture of the uterus. At the same time, an incipient inguinal hernia was closed by Bassini's operation. Recovery was free from complication.

Indications of Prostatectomy.—Cathelin (Journ. des Prat.) considers that prostatectomy should be carried out in the following cases: (1) In patients suffering from enlarged prostate and complicated with urinary troubles; (2) when in a patient with enlarged prostate repeated attacks of acute retention of urine occur; (3) in those cases of chronic retention of urine where the contractility of the bladder remains good; (4) in cases of enlarged prostate with prostatic calculi, single or multiple, primary or secondary. Prostatectomy may be carried out in three different ways, but in the large majority of cases it is advisable to remove the gland by the perineal route; by doing so there is no risk of severe hemorrhage and drainage may be most effectually carried out. Further, this mode of procedure is to be advised for the obese, for the cachectic and the very old, and for those in whom the urine is infected. The transvesical method the author does not consider advisable, in spite of the statistics of Freyer. Although this method can be easily and rapidly carried out, there is a danger of alarming hemorrhage occurring; further, drainage is very unsatisfactory and the wound requires much greater care than the perineal; there is also the danger of infection of the neighboring parts and of a fistula remaining.

In the author's opinion the transvesical method should only be employed in those cases where very marked hematuria exists, and where one is in doubt as to whether a simple enlarged

prostate is present, or whether there be a tumor of the bladder. The combined operation (perineo-suprapubic) the author reserves for cases of very large prostates. As regards the reasons why prostatectomy should be advised, the author points out that some patients, especially those comparatively young, may be so tormented by the necessity of carrying out catheterizations that they demand radical relief for their troubles. The danger of making false passages with the catheter, and the difficulties arising in carrying out catheterization, together with the likelihood of complications, such as orchitis, cystitis, etc., arising, are some of the strongest reasons for advising prostatectomy. In cases of enlarged prostate with prostatic calculi, the base of the bladder behind the enlarged lateral lobes of the prostate becomes depressed, cuplike, and may later become the source of grave troubles; by removing the prostate the base of the bladder is put on the same level as the prostatic urethra and the source of danger done away with. Diseases of the heart and lungs, cancerous disease of the prostate, or cases in which the prostate has lost its vesical contractility, are contraindications for operation, as also are those cases where the kidneys are diseased.

Delivery of Triplets.—Boquel (Prov. Méd.) reports a case of a woman who gave birth to triplets, all of which were breech presentations delivered without difficulty; recovery was good; there were no complications, and the three children survived. A triple pregnancy is generally accompanied by an excessive functional activity, which may promote urinary, respiratory, or circulatory troubles. Preliminary examinations at intervals would aid in the diagnosis of such cases and ensure the necessary rest and hygienic precautions. The question of inducing labor would also be considered in relation to each case. In triple pregnancies there is prolonged labor, owing to the abnormal distention of the uterus, which produces a false inertia, which can be relieved by rupturing the membranes, although the os is not altogether fully dilated. When one has reason to fear eclamptic attacks or syncope, or when the pains are excessive and yet the patient makes no progress, rupturing the membranes will have more effect than narcotics and hot applications. In the interests of the mother or child, it may be required to terminate the labor by intervention, either by version or the use of forceps; in the former case great care must be exercised to prevent impaction. As soon as the first fetus is born a double ligature should be secured round the cord, lest the fetal circulation should be interdependent. As a rule, there are three placentas, but the practice has its value. The first delivery should be followed by a vaginal examination to ascertain the contents of the uterus, and, if need be, to

rupture the membranes containing the second fetus—an act which should not be delayed beyond two hours after the first birth. If there be a third fetus in a separate and intact membrane, the interval until this ruptures may lengthy. When the patient is fatigued and depressed, there is a temptation to intervene and hasten the third birth; the risk of thus causing serious trouble is considerable, and it is wiser to wait for some time before interfering. In triple births delivery of the placenta is usually easy and uncomplicated. The uterus is distended and inert, and must be allowed time for contracting, unless indications for haste are obvious. It is advisable to wait till the placenta is in the vagina before attempting to extract it. Further difficulties are a tendency of the uterus to relax and give rise to hemorrhage or syncopal attacks on the part of the patient. Involution is slower, and it requires a longer period of rest and care to re-establish the health.

Large Uterine Fibroid in Woman Aged Twenty-three.—Mauclaire (*Comptes rendus de la Soc. d'Obst., de Gynéc. et de Péd. de Paris*) recently had under his care a woman, aged twenty-three, married two years. For several years she had been subject to metrorrhagia. She had aborted in the middle of the fourth month nearly eight months before she was admitted into hospital. The temperature rose after the abortion, and the patient's doctor then discovered a swelling which reached to the navel and had all the characters of a uterine fibroid. Mauclaire confirmed the diagnosis, and as the patient was very anemic, and the hemorrhages had increased since the miscarriage, he decided upon operation. He performed supravaginal hysterectomy, and saved both ovaries, covering them by the layers of the broad ligament. Convalescence was uncomplicated. The tumor was an interstitial fibromyoma developed in the posterior wall on the right. The uterine cavity was elongated, but not much widened. Mauclaire objected to myomectomy as the tumor was bulky and spherical, and the uterine cavity unhealthy. Hamel could find no trace of sarcoma tissue.

In a discussion on the case, Segond spoke of another where a woman aged twenty-three, a qualified lady doctor of Slavonic race, suffered from a large bleeding fibroid which he removed by morcellement, saving the uterus. The patient was in good health, but Segond could not guarantee that the uterus would ever bear a fetus. Richelot and Pozzi had observed large fibroids in Spanish-American women; it had long been known that the negro race was very subject to fibroid disease. Pinard declared that in the only two cases under his care the patients were of creole origin (that is, white French West Indians). Early puberty—the rule in warm climates—seems

to predispose to fibroid disease, and to its relatively early development.

Amputation of Hypertrophied Cervix during Pregnancy.

—Potocki (*Ann. de Gyn. et d'Obst.*, December, 1906) performed this operation on a woman in the fourth month of pregnancy. She had been pregnant once, ten years earlier, and the labor was perfectly normal. For two years she had been troubled with a protrusion of a mass at the vulvar cleft. Hypertrophic elongation of the vaginal portion of the cervix was detected, but she declined surgical assistance until she became pregnant again. Potocki amputated the cervix one-fifth below the reflection of the vagina in the anterior fornix. He fashioned two flaps, and took especial care not to make any traction on the cervix at any stage of the operation. The amputated portion measured 2 3-4 inches in length. Hardly any hemorrhage occurred. The vaginal and the uterine mucosa were united, with as much accuracy as was possible, by means of catgut sutures. The vagina was tamponed with iodoform gauze. One centigram of morphine was injected morning and evening for the first three days. The patient was delivered at term of a male child weighing seven pounds; it was reared and became a strong child. Quite recently, six years after the operation, Potocki examined the patient. The uterus was not hypertrophied, the cervix projected only to a normal extent into the upper part of the vagina. Potocki discusses at full length the arguments and evidence in favor of operations on the hypertrophied cervix during pregnancy. When the amputation is performed aseptically and the mucosa of uterus and vagina carefully united there will be no obstacle to normal dilatation of the cervix during labor.

Vaso-vesiculectomy.—Baudet and Kendirdjy (*Rev. de Chir.*), in concluding a paper in which they describe at length the different methods of vesiculectomy and vasectomy, discuss the indications for these operations in cases of genital tuberculosis. The combined operation is necessary, the authors hold, when the tuberculous disease has produced a urinary fistula; when there is rectal obstruction; in the presence of urinary troubles caused by vesiculitis and not dependent on cystitis; when in a patient who is undergoing treatment for genital tuberculosis, or who has already undergone castration, the *vesiculæ seminales* continue to increase in size; finally, when there are well-marked lesions along the whole extent of the *vas deferens*. Moreover, vesiculectomy, the authors think, should be regarded as the elective treatment when one or both vesicles are much enlarged. In cases of genital tuberculosis, when there are but very slight lesions of the *vas* and the

vesiculæ, the authors would reject vaso-vesiculectomy, although this operation under such circumstances is indicated, according to Roux, for the prevention of frequent relapse of epididymitis and the consequent necessity of castration, and of extension of the disease to the other testis and general tuberculous infection. These indications, the authors hold, are quite theoretical, and cannot always be met by this method of operative treatment. It would, in their opinion, be preferable in such cases to rest content with conservative interventions on the testis and epididymis or with strictly medical treatment.

Pseudo-Ascites in Infants.—Allaria (Rif. Med.) reports two cases of young children (eleven months and two years), the subjects of chronic gastro-enteritis, who presented symptoms of ascites, and yet when a laparotomy was performed upon them no fluid was found in the peritoneal cavity. Both children were much emaciated, and had suffered from chronic diarrhea; in one case there was a well-marked tuberculous history. There was no cardiac or renal mischief in either case. Each case presented the classical signs of ascites, flank dullness with the concavity upwards, flattened umbilicus, thrill, and definite sense of fluctuation. As they did not improve under medical treatment, and as tuberculous peritonitis was suspected, laparotomy was performed. It was then found that there was no fluid, nor any sign of tubercle or peritonitis; but the small intestine was seen to have an unusually long omentum, and it seemed probable that the sense of fluctuation was really due to fluid contained in the weakened small intestine (weakened from persistent chronic enteritis), which owing to its long omentum had prolapsed into the flanks. The dullness was usually more marked on the left side. Such cases are rare, and have not often been mentioned in medical literature, but the author refers to some other cases described by Toller.

Surgical Treatment of Prostatic Hypertrophy.—Freudenberg (Wiener Klinik, I), in a report which he communicated by special request to the International Medical Congress at Lisbon, discusses the indications and the results of the different surgical methods of treating prostatic hypertrophy, and directs particular attention to Bottini's operation, which a wide experience in urological work has led him to regard with much favor. A full description is given of the technical details of galvano-dieresis of the enlarged prostate, and the scope and limitations of this method are clearly stated. The author, who has done much statistical work relating to this subject, and collected from all available sources data of the results of Bottini's operation, presents a table of 152 instances of this

treatment in his own practice, showing cure in 84 cases, considerable relief in 45, failure in 12, and in the remaining 11 cases a fatal result. In regard to the high death-rate of 7.2 per cent. in subjects of the average age of 65 years, the author shows that with improved methods and increased experience the mortality has been reduced from 12 per cent. in his first series to 3.8 per cent. in his last series of 50 cases. The proportion of failures in the corresponding periods shows reduction in the latter to rather less than one-half. Permanency of good results cannot, it is evident, be urged in favor of the galvano-caustic operation. In a table of 85 cases, made in special reference to this point, it is shown that in 21 of these a relapse occurred within the first twelve months.

Bottini's operation, the author holds, presents the following advantages over other radical methods of dealing with prostatic hypertrophy: (1) It is an operation to which the patient is less indisposed to submit, and for this reason the surgeon is often in a position to act before infection of the urinary passages has been developed, which is quite exceptional in prostatectomy; (2) with the surgeon who is an expert in the technique of this method, it is decidedly a less serious operation than prostatectomy, and therefore can almost always be practiced with local anesthesia, while with prostatectomy, on the other hand, general or at least lumbar anesthesia is necessary; (3) there is little risk of potency, which in total perineal prostatectomy is almost certainly destroyed, being impaired.

Whether suprapubic prostatectomy be so destructive in this respect as the perineal operation is an open question, but as Freudenberg points out, it seems *a priori* improbable that total removal of the prostate by way of the open bladder would in regard to the future potency of the patient act otherwise than removal by the perineum; (4) there is extremely little risk of persistent incontinence after Bottini's operation, and, if this be properly performed, a urinary fistula is not likely to follow. Prostatectomy has the advantage of being a generic surgical operation demanding no special experience, no urological skill, and no complicated instruments. Probably, the author states, it is not so liable to be followed by relapse as Bottini's operation, but it remains doubtful, he thinks, whether after prostatectomy urinary troubles may not be again developed in the course of time as the result not so much of overgrowth of retained portions of the prostate as of cicatricial retraction.

In ending his report the author lays down the following conclusions in regard to the relative indications of Bottini's operation and prostatectomy: (1) The former is more an operation for the urologist and the surgeon who has paid much attention to urological work, while prostatectomy is open to the general as well as to the special surgeon; (2) the galvano-

caustic operation is a much less serious procedure than prostatectomy, and more suitable for feeble and very old subjects; (3) with the younger subjects of prostatic disease, prostatectomy is likely to meet with refusal on the score of its probable interference with potency; (4) Bottini's operation is indicated in cases of both relatively small and medium size as well as of large prostates, but in the latter class of cases the operation is more formidable and the risk of relapse is perhaps greater; (5) in cases in which the urinary obstruction is due exclusively to a prostatic barrier, and which can be readily cured by a properly-performed galvano-caustic operation, prostatectomy, especially any complete method, would be an unnecessarily severe treatment; (6) Bottini's operation is not applicable to cases of globular and peduncular middle lobe: here prostatectomy is indicated, the latter operation being only a partial one if the lateral lobes of the prostate are not enlarged; (7) if it is impossible before any operation to determine by cystoscopic examination or otherwise the condition of the bladder and prostate, suprapubic prostatectomy is generally to be preferred to Bottini's operation; (8) complicating vesical calculi, though presenting no direct contraindication to Bottini's operation, should always tend to favor the choice of prostatectomy; (9) Bottini's operation is barred by persistent fever, which, on the other hand, is lowered after prostatectomy through rest and drainage of the bladder. In considering the rival claims of perineal and suprapubic prostatectomy, Freudenberg states that the information at our disposal is at present too small to permit of any definite conclusion. The perineal method, he states, seems to have a somewhat smaller mortality, but is less certain in its results. Moreover, it is more difficult in its performance, is apt to result in troublesome local lesions, especially rectal fistula, and is more frequently followed by obstinate incontinence. The suprapubic operation of all the radical methods of dealing with enlarged prostate has given the best results, but has hitherto shown a higher death-rate.

The Bag of a Country Accoucheur.—Peysonnie (La Clin.) points out the difficulties under which country doctors work when attending confinements without the resources of a town or hospital, and often without the assistance of a midwife. The practitioner must be well provided with the necessary materials, but his chief trouble will lie in obtaining a sufficiency of boiling water in clean vessels, and of sheets and towels. He advises that the bag of the accoucheur be furnished with a small oval flat dish, a douche can to contain two liters with a long rubber tube, a glass nozzle in a cardboard box, an intra-uterine sound of glass inclosed in a metal case and packed with

cotton-wool, some boricated vaseline, two packets of cotton-wool, and some ether, ergot, and tabloids of corrosive sublimate. In addition he takes a rubber catheter, nailbrush, stethoscope, and one pair of Tarnier's forceps wrapped in a towel. A little case is also required with a few curved needles, some silkworm gut and carbolized silk, as well as scissors and forceps. The ether with the aid of a flame is used for sterilizing the forceps and other instruments, and the little dish is useful for making up the disinfectant lotions in. He considers that lacerations should always receive immediate attention, as wounds of the vagina and perineum are frequent sources of infection, and many grave complications arise from them.

Book Reviews.

A TREATISE ON ORTHOPEDIC SURGERY. By ROYAL WHITMAN, M. D., Clinical Lecturer and Instructor in Orthopedic Surgery in the College of Physicians and Surgeons of Columbia University, New York. Third edition, revised and enlarged. Illustrated with five hundred and fifty-four engravings. Lea Brothers & Co., 1907. Philadelphia, New York.

The medical profession has by common consent accorded such a place to Whitman's 'Orthopedic Surgery' that it is now one of the staples of surgical literature. We have been pleased heretofore to give it our meed of praise and now this present volume may be disposed of by quoting the author, who calls it a revision and amendment to the last edition. Much new material and many new illustrations have been added, and it is given out by the author in the hope that it represents this department of surgery at the date of issue.

SURGICAL SUGGESTIONS. Practical Brevities in Surgical Diagnosis and Treatment. By WALTER M. BRICKNER, M. D., Chief of Surgical Department, Mount Sinai Hospital Dispensary, New York; and ELI MOSCHCOWITZ, M. D., Assistant Physician, Mount Sinai Hospital Dispensary, New York. Duodecimo; 60 pages. New York: Surgery Publishing Co., 1906. Cloth, 50 cents.

This little book is most novel, not only on account of the many original terse and epigrammatic practical suggestions given, but its general appearance and attractive form. It contains 250 suggestions grouped under proper headings and its contents is carefully indexed. While some of the items are familiar to the practical surgeon, they are presented in a manner that will impress them on the reader's memory. The book is bound in heavy cloth, stamped in gold, and the text is printed upon India tint paper with marginal headings in red. This book will be much appreciated by the general practitioner, not alone on account of the value of its contents, but as an artistic bit of book-making.

ATLAS TEXTBOOK OF HUMAN ANATOMY. By PROFESSOR J. SABOTTA of Wurzburg. Edited with additions, by J. PLAYFAIR McMURRUCH, A. M., Ph. D., Professor of Anatomy at the University of Michigan, Ann Arbor. Volume I., quarto of 258 pages containing 320 illustrations, mostly in colors. Volume II., quarto of 194 pages with 214 illustrations, mostly in colors. W. B. Saunders Co., Philadelphia, London. 1907.

The author had in mind a work which would be useful to both the student and physician in being practical, not too comprehensive but absolutely true in every detail with reference to a scheme of color and arrangement. The first volume has been adopted for use during dissection, the illustrations conforming to the usual methods of instruction in anatomy. The fundamental principle of the work has been to avoid any unusual presentation of the subject that would tend to confuse the beginner or make the recognition of well-known relations more difficult. The author modestly suggests that this work is not for a finished anatomist but it is really the expert who will appreciate the almost tender care spent upon the illustrations so that their parts might possess proper relations, and the colors are exact reproductions of the appearance of normal tissues. This is the first anatomical atlas in which multicolor lithography has been employed, while with half-tone methods and color processes the illustrations are beyond anything of the kind we have thus far seen. The first volume is devoted to the consideration of the bones, ligaments, and muscles, the nomenclature being essentially that of the Basle Committee. The second volume, which is a direct continuation of the first, treats of the viscera and heart in the same thorough and interesting manner as was observed of other subjects in Volume I. The volumes are of handy size and should be a great boon to the student of practical anatomy.

THE PRACTITIONER'S MEDICAL DICTIONARY. By GEORGE M. GOULD, A. M., M. D. With 388 Illustrations. Octavo; xvi + 1043 pages. Flexible Leather, Gilt Edges, Rounded Corners. P. Blakiston's Son & Co., Publishers, Philadelphia.

This work is offered as an illustrated dictionary of medicine and allied subjects, including all the words and phrases generally used in medicine with their proper derivation and definition. The author and editorial staff have sought to furnish adequate information as to trustworthy definitions of medical terms and words met with in medical literature, giving what is essential with far more completeness than is found in smaller works. Among other features are the terms of the Basle anatomic nomenclature, the metric system of weights and measurements, the additions and changes of the new Pharmacopeia together with new illustrations distributed so as to be conveniently consulted. The binding, type, and paper are of the best, the volume is attractive in appearance and of a convenient size, and is likely to prove very popular with the medical profession.

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VOL. XXIX.

MANUAL AND INSTRUMENTAL DILATATION OF THE GRAVID UTERUS.

BY L. L. DANFORTH, M. D.

The most trying experiences of the obstetrician are met with in the presence of some condition which demands speedy delivery, and yet the portal of exit from the cavity of the uterus persists in remaining obstinately closed.

Perhaps some complication has suddenly developed which endangers the life of the mother or child, or both, and time cannot be given for the cervix uteri to expand naturally, nor even by the slower artificial means, if these precious lives are to be observed. Urgent relief is demanded; that is evident; but how can this much to be desired result be brought about when practically the only channel of delivery refuses to open under the natural influences, or does so so slowly and imperfectly as to be practically useless so far as the conservation of life is concerned? It is to the elucidation of this very practical subject that I shall ask your attention in this essay.

I shall first enumerate the principal conditions which may demand artificial delivery, and secondly, and more minutely, speak of the means whereby this result may be attained. I shall also dwell with especial emphasis upon the relative merits

of the different modes of procedure, and speak of the technique appropriate to each method. Cases which require artificial dilatation of the cervix uteri during the pregnant or parturient state may be divided into two classes.

First, those in which the obstacle is wholly due to the physical condition of the cervix uteri; as follows:

(a) A contracted external os, sometimes met with in primiparæ of advanced years, due primarily in all probability to a persistence of the "pin-hole os" of the non-pregnant, with co-existing endo-cervicitis which renders the margin of the os unnaturally rigid.

(b) Old lacerations of cervix with excess of fibrous tissue; or following trachelorrhaphy, practical obliteration of os uteri with more or less fibrous tissue in cervix.

(c) Tumors in cervix.

(d) Rigidity with spasmodic closure of os.

In the second class may be placed all complications of pregnancy which render immediate delivery necessary in the interests of mother or child.

(a) Hemorrhage; this may be due to placenta previa; or to premature detachment of a normally situated placenta, or from any cause, traumatic or idiopathic.

(b) To the toxemias of pregnancy, or the conditions complicating toxemia, such as eclampsia, threatened or actual.

(c) Premature rupture of membranes with rigidity of the cervix uteri.

(d) The induction of premature labor from any cause inherent in mother or child, such as heart disease with defective compensation, death of fetus *in utero* from constitutional causes, such as syphilis or tuberculosis.

(e) Transverse presentation of the child when the cervix is narrow, the membranes unruptured, external version unsuccessful and delay unsafe; also when the os shows no signs of dilating and a "contraction-ring" is forming early and high up. This condition is met with in some cases of pelvic narrowing, whether in the pelvis of the justo-minor type, or in the simple flat or generally contracted flat pelvis.

(f) In cases of threatened rupture of uterus.

In any of these conditions, whether essential or contributory, artificial dilatation of the cervix may become necessary. It

is not within the scope of this essay to describe the symptomatic indications for interference. The purpose is to define the limitations of each method at our command for effecting dilatation, and to make some comparisons between the different procedures.

In the above classification of conditions requiring artificial dilatation, it will be observed that some are of such a character that plenty of time can be taken to effect expansion of the cervix, and others will demand immediate delivery. It is convenient, therefore, both theoretically and practically, to classify these cases into those which demand manual or instrumental dilatation of the pregnant or parturient uterus within a short time, say an hour or two, and those where a longer time is available for the removal of the cervical barrier.

For *rapid* dilatation, the hand employed according to the method of Edgar (bimanual dilatation) or the method of Harris supplemented by the mechanical dilator of the type of the Bossi instrument, are the most efficient and reliable measures. In rare cases, incision, including vaginal Cæsarean section and deep cervical incisions, according to the methods of Dührssen of Berlin, have proven satisfactory in the hands of many experienced operators.

After the thirtieth week of gestation, the hand alone will prove satisfactory in most cases, instrumental dilatation and incisions being rarely called for; the converse of this statement applying with equal force for the period preceding the thirtieth week.

For *slow* dilatation of the cervix, I have relied chiefly on the hydrostatic bag, and the most efficient and satisfactory instrument of this type is the simple, strong, wedge-shaped bag devised by Dr. Vorhees of New York City. It is made of canvas covered with rubber and when properly made will stand a great strain under trying circumstances without rupture; it is inelastic and thin enough to slip into the uterus when rolled up and held by an ordinary uterine dressing forceps, through a canal open sufficiently for the finger tips to pass. The larger Champetier de Ribes bag is an excellent instrument, but its use is much more limited than the Vorhees bag. It is expensive and requires a special forceps to facilitate its introduction.

The solid bougie to a certain extent is a rival of the hydro-

static bag, and the same may be said of gauze packing of the cervix. The former will in some cases start up uterine contractions and bring about natural dilatation, while the gauze packing merely softens the cervix and paves the way for other measures.

The bag, bougie, and packing all act more promptly and energetically in primiparæ than in multiparæ.

The rubber bag has no rival for the induction of labor for inertia of the first stage, and as a temporary dilator in placenta previa with a thick unyielding os, though in the latter class of cases it is often too slow to be wholly satisfactory.

The cone-shaped bag of Vorhees resembles as closely as any artificial means can, the dilating influence of the natural bag of waters. It acts by dilating from above downward, and by its irritating influence upon the uterine muscle it causes contraction of the longitudinal muscular fibers of the cervix, and so the os is quite naturally effaced. The chief advantage of the bag is that it inflicts no injury; it is easily introduced, it is positive in its influence, in provoking nature to do most of the work, and it is readily made aseptic. The only disadvantage is its slowness of action, but this applies to a small class of cases only.

There are a few points concerning the technique of introduction which it is worth while to remember. Anesthesia is not necessary. One must have a Davidson syringe, a dressing forceps to carry the bag into the uterus, a volsellum to steady the cervix, and an artery clip, or a piece of silk will answer, to ligate the tube of the bag after it is filled with water. All these articles must be boiled and the parts involved rendered thoroughly aseptic, even to clipping or shaving the vulva. To insure this a piece of gauze with an opening in it may be used to cover the vulva. The patient's hips are brought to the edge of the bed, a speculum introduced, the anterior lip seized and drawn down slightly. Before doing this, however, it is a wise precaution to ascertain exactly how many compressions of the bulb of the syringe are required to fill the bag absolutely full so that it is firm and hard. This insures the proper degree of distention when the bag is out of sight within the uterus. A sterile solution (one per cent. lysol) should be used as a distending fluid. When all is ready, the folded bag is taken in the gentle grasp of

the forceps and passed within the cavity of the uterus. If the os is too small (an opening which will admit one finger will take the largest bag of the set) it may be dilated slightly with the dressing forceps or a uterine dilator if one is at hand. When fully within the cavity of the uterus beyond the internal os, it is then filled, and a clip or ligature applied to the tube. If the presenting part is pushed to one side in this maneuver, no harm will result.

When *in situ*, direct the nurse to pull gently but firmly upon the tube for about one minute, at intervals of fifteen minutes or so, so as to bring the bag down in contact with the ring of the internal os. This will imitate nature's efforts and facilitate them, and the same time that it brings on pains, it is mechanically dilating the cervix.

The Hand.—No instrument which has ever been devised can compete with the hand in effecting dilatation of the gravid uterus. Safe dilatation depends upon the recognition of the fact that the cervix, and particularly the internal os, is made up of strong muscular tissue which cannot be stretched like an elastic rubber band, but must be overcome by a counter force, intermittently and persistently applied; in other words, the muscular band constituting the internal os must be "tired out," and neither stretched nor torn if we would keep within the limits of conservative action. Bruising and laceration of the tissues are just as likely with the hand as with instruments. This danger may be avoided in most cases by patient gentleness.

Manual dilatation, broadly stated, has a field midway between slow dilatation with rubber bags on the one hand, and cervical incisions on the other as regards rapidity of delivery and danger to the mother.

The cases which are best suited to the hand are cases of placenta previa, and the toxemias of pregnancy, especially in the presence of convulsions if the cervix is soft and dilatable. If the cervix is rigid and the internal os closed, the forcible introduction of the hand is liable to produce too much shock to be safe; preparatory measures would be advisable under such circumstances, both local and constitutional. The great disadvantage of manual dilatation lies in the fact that the hand readily becomes exhausted and practically powerless. As the hand is capable of exerting its power for only a limited time,

it is sometimes necessary to dilate partially with an instrument before the hand is used. The hand cannot be used satisfactorily when the vagina is too small to admit of its entire introduction, and the presence of the head in the cavity of the true pelvis is another barrier to its use in many cases. The hand cannot be used effectively unless the first finger can be introduced to the metacarpophalangeal knuckle. It will thus be seen that the hand as a dilator has its limitations. The hand should not be a source of infection. Rubber gloves effectively obviate this danger.

Every physician should know one method of dilating the gravid uterus with the hand. Dr. Harris, of Passaic, N. J., has described a method which is known by his name, in which he uses one hand. Dr. Edgar, of New York, uses two hands. Harris slips the forefinger and the thumb, then two fingers and the thumb, and successively the third and the fourth; instead of trying to dilate by separating the fingers, he flexes the fingers, the thumb being extended as much as possible until the whole hand is introduced. It requires from one-half hour to one and a half hours to dilate the cervix to the circumference of eleven to twelve inches.

Edgar draws apart two fingers back to back, then others are slipped in and traction made in opposite direction. This method will serve well in some cases of eclampsia when great rigidity does not exist, in placenta previa and in delayed labor.

Instrumental Dilatation.—In many cases in which manual dilatation is impossible, or possible only after dangerously prolonged operation, instrumental dilatation is useful; in other words there are occasional cervical rings so rigid that no finger can affect them. In such cases, the two-bladed dilator of Wathen, followed by one of the more powerful instruments, will prove satisfactory. If difficulty is experienced in inserting the second finger, it is advisable to resort to further dilatation with the Bossi dilator. This instrument will render invaluable service in cases in which much resistance is encountered on account of the non-disappearance of the internal os, and in which the rubber bags are not appropriate because of their slow action. Fifteen or twenty minutes' use of the Bossi instrument will set up uterine action, with resultant obliteration of the internal os; it will also cause softening of the cervical rings

to such a degree as to permit of the insertion of the fingers whereby dilatation may be completed rapidly and safely. It is not necessary to complete the dilatation with this instrument. The fingers may also be used in connection with the Bossi dilator. After it is inserted, the finger may be put in between the blades, first one finger, then two, and so on, the blades of the dilator merely taking up the slack in the tissues, the fingers doing the rest. Bossi's claim for his instrument is that with it one can in most cases dilate the parturient cervix in from twenty to sixty minutes safely, and thus enable one to empty the uterus in a short time. This instrument has been in use since 1890 and at first was not received with much favor. Of late it has increased in favor and has been used abroad, in Dresden, Berlin, and Paris, and in this country in the Sloane Maternity, and at Johns Hopkins, and by individual operators like Edgar and others. The writer has had only two occasions to employ it, and those were in private practice. The objection to it is that the blades are liable to slip after two-thirds dilatation, and it requires great care to regulate the force properly. There are certain rules to be observed in using the instrument. The blades are to be covered with rubber tubing before insertion; the wheel regulating the expansion of the blades is given a quarter turn every two minutes. In half to three-quarters of an hour, the indicator should register from nine to ten cm. This will give a dilatation of three and three-fifths to four inches, which is sufficient to permit the head to pass. It is desirable, as has been stated, to utilize the hand to aid the instrument whenever possible, keeping just short of full dilatation with the blades. Thus one can keep within the limits of safety. Used with caution, the instrument is capable of doing good service. The operator should be prepared to repair lacerations, as they are quite liable to occur even in careful hands. The consensus of opinion in this country and abroad at the present time is that the Bossi dilator has a limited field of usefulness when rapid dilatation of the cervix is necessary, after effacement. Before effacement the rubber bag should be used if time will permit. The Bossi dilator should never be used in placenta previa. Dührssen and some other German operators do not believe in the Bossi instrument at all. Dührssen says the instrument leads to tears which endangers

life; that in cases of rigid cervixes there is a lack of elastic fibers, and dangerous tears are liable to result from attempts at dilatation. In such cases Dührssen thinks it best to dilate by incision. In Germany the majority of operators favor the incision. The chief prohibitory factor of Dührssen's incision is an undilated internal os, or incomplete effacement of the cervix. Therefore, in multiparæ incisions are contraindicated, and are especially applicable to primiparæ; they are contraindicated in placenta previa.

Inasmuch as incisions are potentially dangerous, the operation should only be undertaken for absolute indications, and then only by a skilled operator in a hospital by preference, or, if at home, only after the most careful attention to surgical detail in preparation, and with every convenience to meet emergencies. The scissors are used in the four quadrants of the cervix, under the guidance of the eye, viewing the parts through a speculum. With one or two cuts each incision is carried to the vaginal vault. Sometimes the left hand is passed into the vagina (the thumb remaining outside), the middle finger passed into the cervix and the index remaining outside, these being used as a guide for the scissors which cut to the vaginal vault. The posterior cuts are made with the index finger within and the middle outside, the cuts being made between. Anesthesia is necessary. Immediate delivery follows the incision. In this country the incisions have not been much employed, but when it is necessary every obstetrician should be able to do it. The operation is in reality very simple. It is only in cases in which it becomes necessary to act quickly that incisions become necessary.

To summarize the subjects which have herein been discussed, I would say:

That when *time* is not an element of importance, the rubber bag is a perfectly satisfactory instrument in effecting expansion of the cervix in a manner which as closely resembles nature as anything which obstetric art has yet devised.

In emergencies the hand may supplement the bag, or the hand may be relied upon to secure dilatation safely and within a comparatively short period of time. But the hand is not universally applicable.

For the rigid cervix of the early months, for the unyielding girdle of the elderly primiparæ, for the grisly hardness of eclampsia, the Bossi instrument is a great boon, but it must be used with caution and its dangers carefully avoided.

For certain emergencies in the face of a rigid cervix, incision may have to be resorted to, but this should only be undertaken by skillful surgical hands and preferably in a hospital.

SURGERY OF THE FIFTH NERVE.

J. EMMONS BRIGGS, M. D.

The Greek mythology portrays the sufferings of Tantalus in the lower regions, but neither the thirst of the ancient hero, nor the fear of the suspended rock can be compared with the suffering and despair experienced by the victim of tic douloureux. He is a sufferer serving a life-sentence, from which death alone can liberate.

In the time allotted me in which to discuss this important subject no general considerations of trigeminal neuralgia can be expected. Only the briefest possible considerations will be given to the extra-cranial operations, for rarely indeed do patients consult us until they have run the gauntlet of minor surgical procedures. The supra-orbital, infra-orbital, and inferior dental, one or all, has been severed, and the pain has recurred. A patient once having obtained relief will invariably return for surgical aid when the pain recurs.

Our experience with neurectomy of the trifacial nerves, when made peripherally, is gratifying as a temporary expedient. The length of the immunity from pain in my experience has been very variable. Sometimes only two or three months of complete relief follow, again as many years. The pain very surely returns and relief is again demanded.

What to do next is much more of a problem. Shall it be another attempt at the same location, in the delusion that the nerve has united? Such a course will be futile. We must plan an attack upon the nerves much closer to the brain.

Supra-orbital neuralgias have been, in my experience, more lastingly benefited by neurectomy than neuralgias of the infra-orbital nerves. In infra-orbital neuralgias the relief afforded by neurectomy at the exit or along the course of the infra-orbital canal, is very transitory. This is accounted for by the fact that the orbital and the post-superior dental branches are given off before the nerve enters the infra-orbital canal. Therefore, when the condition is severe, as when it recurs after infra-orbital neurectomy, the trunk of the second division together with Meckel's ganglion, must be excised, or the nerve must be severed between this ganglion and the brain. The inferior dental nerve is easily reached in the ramus of the jaw.

I have usually trephined the jaw-bone midway between the angle and the last molar tooth through an external incision. This operation is simple and more lasting in its results than neurectomy of the second branch, but as has been said, pain recurs and we must then resort to more radical measures.

The major operations for the relief of tic douloureux rank among the most delicate known. They require very accurate anatomical knowledge and manual dexterity.

As pioneers in this field of surgery should be mentioned the names of Professors Rose, Hartley, Krause, and Horsley, who have devised operations for the removal of the Gasserian ganglion.

The excision of the Gasserian ganglion is, however, at best a serious, and often a mutilating operation and is accompanied by a high mortality.

In Turk's tabulation of 201 cases, 83 per cent. survived the operation, and 77.6 per cent. could be counted upon as permanently cured. Thirty-three cases died, 17 immediately following operation. Eleven did not regain consciousness, and the remainder succumbed to meningitis, brain tumors, abscess, pneumonia, softening of the brain, hemorrhage, and uremic coma.

The removal of the Gasserian ganglion necessitates severe compression of the brain by retractors. This may injure the structure of the anterior lobes of the brain, and the evulsion of the ganglion is frequently accompanied by severe shock. The nerve supply may be so severely injured that loss of vision results.

In view of the severity of the Gasserian ganglion operation and its sequelæ, and the inefficiency of the extra-cranial procedures, let us consider whether there is not some middle ground, some operation which, while not as hazardous as the former, will show equally lasting results. Fortunately we have in the Abbe operation exactly what is demanded, an operation relatively safe, and as far as the writer is cognizant, capable of affording permanent relief.

In the reports of two Abbe operations which are appended I have gone sufficiently into the technique of procedure, so that it will be unnecessary to consider the matter here in detail.

Dr. Robert Abbe of New York City has described his operation very minutely. There are, however, a few points which may perhaps be discussed with propriety.

Gutta-Percha Tissue.—Dr. Abbe recommends the introduction of gutta-percha tissue between the severed ends of the nerve. In this one respect I deviated from his technique. My reason for so doing was fear of the unknown properties of gutta-percha tissue; i. e., the length of time it is capable of retaining its integrity in the tissues, and the still greater fear of introducing a substance which could not be sterilized by heat. Gutta-percha tissue cannot be boiled nor can it be subjected to intense dry heat. We must rely upon chemical disinfectants such as a corrosive sublimate and formaline solutions.

I made use of the gold leaf in one case, after pushing the distal severed ends of the nerves downward through the foramina by rolling the gold leaf into a ball considerably larger than the diameter of the foramen and crowding it forcibly into the canals.

In my second case a piece of moderately thick gold leaf was laid over the foramen. In both cases the gold leaf was held in sterile forceps over an alcohol flame until red hot. No method of sterilization can be more positive than this.

Paralysis.—In nearly all the intracranial operations which are made for the relief of tic douloureux a paralysis, either transitory or permanent, occurs. Usually the upper division of the facial nerve, which takes an upward course after leaving the parotid gland and overlies the temporal fossa is severed, resulting in a paralysis of the occipito-frontalis and orbicularis palpebrarum.

The deformity resulting consists in a sagging of the brow and absence of frontal wrinkles. I have observed this deformity to be so severe that the patient could with difficulty see out from under the overhanging brow. If the temporal branch of the facial nerve can be preserved these permanent deformities will not occur. It is fortunately possible to avoid this branch in the Abbe operation by making the vertical incision just over the condyle of the jaw. The zygoma can be reached and cleared by the aid of a periosteal dissector and a portion of it excised and the fibers of the temporal branch separated until the temporal fossa is reached.

The skin incision is safe to the lower border of the projecting condyle of the jaw or to a line with the external auditory meatus. If carried lower than this the temporo-facial branch will surely be severed. Again, if the incision is made anterior to the condyle of the jaw, midway between the outer angle of the eye and the external auditory meatus, the upper branches of this nerve will be severed. It is true that this skin incision is located too far posteriorly, but after separating the fibers of the temporal muscle retraction will expose as large an area of bone as necessity requires. A paralysis may follow too vigorous retraction in this region but it will be of short duration.

The skin incision should commence on a line with the external auditory meatus and three-quarters of an inch anterior to it, carried slightly forward and upward about two and one-half inches. When the zygoma is reached it should be subperiosteally resected or as nearly so as a bone can which affords muscular attachments.

Trephining the Skull.—After subperiosteally resecting the zygoma and separating the fibers of the temporal muscles the trephine is applied to the squamous portion of the temporal bone on a level with the upper border of the zygoma. A hole about three-quarters of an inch in diameter is made and this is enlarged with bone-cutting forceps. The dura is gently elevated from the bone.

Plate I shows opening in the skull.

Hemorrhage is first encountered during this step in the operation and may be quite free from branches of the middle meningeal artery. Small strips of gauze should be packed into the wound and pressure exerted, especial attention being directed to filling in the osseous grooves in which the middle meningeal branches course. After from three to five minutes these vessels will cease to bleed. Far more troublesome hemorrhage, however, occurs as the dura is progressively separated from the skull in quest of the foramina through which the second and third branches pass. The bleeding is now venous and rather troublesome, as it quickly fills in the deep wound and obscures the field of operation. Gauze packing may now be tamponed into the wound and allowed to remain about three minutes, when it may be removed and more progress made. Unfortunately when the gauze is withdrawn bleeding is liable

to recur. I have used with far greater efficiency gutta-percha tissue, about which blood coagulates readily and when the tissue is removed quite firm clots adhere to the bleeding points. If hemorrhage proves so troublesome that no progress can be made a packing may be left in the wound for twenty-four hours, when the operation may be resumed.

Mr. E. W. M., American, aged fifty-two, entered the Massachusetts Homeopathic Hospital about the middle of October, 1905, and was under close observation for two weeks



Plate I.

prior to operation. His symptoms commenced seven years ago, at first noticed only while chewing, but gradually grew worse. They soon became spasmodic. Paroxysms of pain lasted about three minutes, then intervals of three minutes, provoked by chewing, talking, or draughts of air. He gradually grew worse and in 1899 Dr. Maurice Richardson of Boston operated upon him. He resected the second branch of the fifth nerve within the speno-maxillary fissure, external to the orbit, by removing a button from the sphenoid bone. At the same time the third branch was severed external to the skull at its exit from the foramen ovale. Then followed a period of two and a half years during which time Mr. M. received great relief. A year ago, the pain having recurred, he entered the Massachusetts Homeopathic Hospital and Dr. N. W. Emerson resected the infra-orbital branch at its exit from the infra-orbital foramen. This helped him slightly for about a month.

About the middle of October, as above stated, he appeared

for readmission. His condition was indeed pitiable and he was desperate, declaring that he would endure his suffering no longer. The dangers of the operation did not in the least deter him; he preferred death to his present state. Severe paroxysms of pain accompanied by violent twitching of the facial muscles occurred whenever he moved his face. The taking of food was so painful that he would go forty-eight hours without tasting it. The second branch gave him the greatest concern, but the first and third participated to a considerable degree.

On October 25, 1905, the Abbe operation was undertaken and successfully carried out. A vertical incision was made. The zygoma was resected, the attachments of the masseter muscle were partially severed, the fibers of the temporal nerves were separated. A trephine was applied to the squamous portion of the temporal bone and an opening made which was enlarged by bone-cutting forceps. The dura was then separated from the base of the skull and all bleeding checked by gauze packing. The foramen rotundum was clearly demonstrated and the second branch of the trifacial was severed as it entered the foramen. The dura was lifted still more posteriorly and the third branch was clearly seen as it entered the foramen ovale. It was cut close to the dura. Both distal ends of the nerve were carefully pushed downward through the foramina and the canals were plugged with sterile gold leaf to prevent reunion. Drainage was left between the dura and the skull, the severed muscles approximated and the external wound closed, except where drainage was established. On awaking from the anesthesia the patient was free from pain. In twenty-four hours the drainage was removed. The wound healed kindly by first intention and the patient made an uninterrupted recovery. He was discharged from the hospital on November 17, 1905, twenty-three days after the operation.

Under date of March 26, 1906, he writes as follows: "I went to work in a jewelry factory (a week after leaving the hospital), and have worked from ten to twelve hours per day since. Do not have any pain in my face and am enjoying the best of health."

Plate II shows a moderate degree of paralysis of the occipitofrontalis.

Case 2.—Mr. A. J. P., American, aged sixty-nine, entered the Massachusetts Homeopathic Hospital early in November, 1905, for tic douloureux. He gave the following history:

Has been suffering from trifacial neuralgia for several years. Thinking that his teeth were at fault he has had all of the molars of the left side extracted, but without relief. Early in the year 1905 he entered the hospital and was treated medically. Feeling that he had somewhat improved he went home for a

time, but in April returned and a resection of the supra-orbital and infra-orbital nerves was made.

This operation resulted in a very marked improvement which lasted four months. For over two months he has been suffering from recurrence of the same twitching and spasmodic pain in the supra- and infra-orbital regions.

This patient has reached advanced life, being sixty-nine years of age. He had a valvular lesion of the heart and was passing



Plate II.

only half the usual amount of urine, which contained albumin with hyaline and granular casts.

The danger of the operation was explained to him but nothing could deter him from attempting the only source of relief afforded. He was operated upon on November 11, 1905, by the Abbe method. The incision was made as previously described. The zygoma was resected and the trephine was applied to the squamous portion of the temporal bone. The dura was elevated. Considerable bleeding was encountered but packing stopped it sufficiently so that progress could be made. The second branch of the fifth nerve was seen just before it entered the foramen rotundum. Here it was grasped with a tenaculum and severed with the scissors. The distal end of the nerve was pushed through the foramen and the canal was overlaid with gold leaf. The bleeding in this case was very annoying and the operation prolonged. The chloroform nar-

cosis, the severe and prolonged pressure upon the brain by retraction and packing, together with the age and general debility of the patient, proved almost more than he could stand, for he stopped breathing and was resuscitated with difficulty. In view of this and taking into consideration the fact that the inferior maxillary branch had never occasioned trouble, it was thought unwise to prolong the operation in order to resect this nerve. The wound was therefore closed except at the angle where drainage protruded. Pain ceased with the operation, drainage was removed in twenty-four hours, patient sat up on third day, and left the hospital within two weeks.



Plate III.

On March 23, 1906, he writes as follows: "I will say that I have not had any pain in my face since you operated upon me. That side of my face is numb but that is nothing compared with the pain."

On August 22, 1906, Mr. P. called upon me. There is still numbness on the side of the face, corresponding to the distribution of the second branch. The slight temporary paralysis of the occipito-frontalis has entirely disappeared as will be seen by the accompanying photograph, and scarcely a perceptible scar remains from the operation. The result appears entirely satisfactory.

Plate III shows patient about one year after operation with no paralysis of the muscles of face.

TWO COMPLICATIONS OF PREGNANCY.

BY T. G. WILSON, M. D.

Case 1.—A. M. æt. twenty-eight, was sent into the local hospital by Dr. Bonnin on November 14, 1905, complaining of acute pain over the right side of the abdomen. She was a nullipara, but was 4 1-2 months pregnant, and had been quite well till six days before admission, when she had a sudden attack of pain in the right side, and she then discovered a lump there, which was very tender to the touch. The next day the pain was easier, but returned again three days before admission, and had since been continuous.

On examination she had a normal temperature, a pulse of 120 to 130, and there had been no bleeding nor vaginal discharge. The pregnant uterus could be felt extending up to 1 1-2 inches below the umbilicus and rather to the left, while to the right was a semi-fluctuant mass the size of an orange, which was very tender on palpation. Pelvic examination showed the pregnant uterus to the left, while to the right was a large solid mass closely attached to the uterus, and above this the tender semi-fluctuant mass felt through the abdominal wall, and which now seemed quite separate from the uterus. Behind the uterus, low down, was felt another small, hard lump the size of a walnut. The condition was recognized as fibroids in a pregnant uterus, but the examination and symptoms suggested the possibility of the smaller tender mass being an ovarian cyst with a twisted pedicle.

On opening the abdomen, however, this mass was found to be a soft, semi-pedunculated fibroid, springing from the right posterior aspect of the pregnant fundus uteri, while the larger hard mass below was a fibroid projecting between the layers of the broad ligament. There were two small intramural fibroids felt to the left of and behind the uterus. The surface of the upper fibroid was mottled, and quite different in appearance to the other fibroids. Its pedicle was about 2 inches in diameter, but there was no twisting, nor apparent interference with its blood supply. This upper fibroid was removed, the edges of the cut in the uterine wall being top-sewn with cat-gut, which effectually controlled the oozing, which was profuse.

The patient had expressed a wish not to have the pregnancy interfered with unless absolutely necessary. The larger fibroid on the right side was so deeply embedded that I feared the necessary manipulations for its removal would induce miscarriage, and it seemed probable that it would rise out of the pelvis with the growing uterus, so that I decided to leave it and give her the chance of going to term. The abdomen was therefore closed. Recovery was uneventful, and there was no further pain while in the hospital; and Dr. Bonnin has told me that he attended the patient at her confinement in April, 1906, when a full-time male infant was delivered without any trouble or subsequent complication. On cutting through the fibroid removed, it was seen to be an example of the so-called red degeneration of necrobiosis, presenting, especially in the center of the tumor, the characteristic appearance of engorgement which has been compared to raw beef-steak, and with a well-marked fishy odor.

Microscopic examination of sections cut at the periphery and from the center of the tumor showed marked deficiency in the nuclear staining of the tissue cells, and towards the center little or no nuclear staining at all, but merely wavy bundles of fibers, showing here and there granular and hyaline changes. There was no engorgement of the sections with blood cells. A remarkable appearance in some of the sections from the periphery of the tumor was the occurrence, here and there, of large oval and polygonal cells with delicate protoplasm, and large rounded nuclei, corresponding exactly to decidual cells, such as occur normally in intra- and extra-uterine gestation, not only in the uterus and tubes themselves, but, as Taussig has recently demonstrated, occur also in different situations in the pelvic viscera, especially just beneath the visceral peritoneum.

This form of degeneration in a fibroid is not very rare, and occurs especially in the case of fibroids complicating pregnancy. Thus, of 19 cases collected by Fairbairn, 14 occurred in patients who were, or had recently been, pregnant. The degeneration mostly affects small or medium-sized growths, and may involve one or more fibroids at the same time, and as the nutrition of these tumors runs centripetally, the first change takes place in the central portions. The degeneration has been compared by Gebhardt to the maceration of a fetus to which no organisms

have gained access; and as far as I can learn from the literature on this subject, no constant organism has been isolated from these degenerated fibroids. The red color of the tumors is not due to their being engorged with blood, as their appearance would suggest, as in the case of a twisted pedicle, and, microscopically, the vessels are not engorged, nor are there extravasations of blood cells amongst the tissue fibers; but the color is apparently due to a general leaking of blood-pigment through the necrosed mass.

W. A. Freund suggests that the fishy odor is due to the presence of amines formed by the breaking down of the proteids of the tumor.

With regard to the pain present in these cases, Sutton maintains that it may be taken as an axiom that when a fibroid becomes painful it signifies that the tumor is undergoing secondary changes; but Cullingworth, in the analysis of 100 uncomplicated cases of fibroid, found pain present in one-third of the cases without anything of the sort to account for it. Bland Sutton has also drawn attention to the fact that the severe pain these patients complain of may easily lead to a wrong diagnosis, as for instance, an ovarian cyst with a twisted pedicle, or a complicating appendicitis; but a marked feature in these cases is the absence of any considerable rise of temperature, at any rate early in the case, before any secondary infection has taken place.

Case 2.—Pyelitis and pyelonephritis complicating pregnancy are, in their more marked forms, comparatively rare conditions. The following case, which was under my care during last year, was an instance of the former condition:

M. F., æt. twenty-seven, engaged me to attend her at her confinement, which she expected in April, 1905. She was a strong, healthy woman, and up till the time I first saw her, at the end of January, 1905, had suffered very little inconvenience from her pregnancy. Her urine was tested early in February, and was normal. At the end of February I saw her on account of a sudden attack of pain in her right side. She had a temperature of 100.4°, a pulse of 112, and her pain suggested an attack of renal colic. There had been no marked frequency of urination, but she stated that her urine had been thick during the last week. There was tenderness and a sense of resistance

all over the right side of the abdomen, and especially on deep pressure in the right lumbar region, and here the lower pole of the right kidney could be felt on deep palpation. The uterus was enlarged to the size of a seven months' gestation, and seemed to be rather more markedly rotated to the right than usual. Fetal heart-sounds were audible in left lower quadrant of the abdomen. A specimen of urine gave an acid reaction sp. gr. 1018, and a considerable quantity of pus. Microscopically numerous pus cells, but no casts nor blood corpuscles, were found. A catheter specimen of urine taken for bacteriological examination showed a pure culture of *B. CC.*, but no other organisms.

The patient stated that this was the second attack of pain she had had during the last week, and she had also noticed that when she lay on her left side the pain gradually got easier, and after the attack her urine was much thicker than before. This observation was confirmed later on, and the thickness of the urine was not altogether due to an increase in the amount of urates but to the amount of pus present. During the next two months the patient had numerous similar attacks of pain, and her evening temperature varied from 99° to as high as 103.6° during two of these attacks. The urine was constantly acid, and there were no symptoms of cystitis, nor was there any history of previous renal colic or renal calculus. A month before labor the patient's bladder was segregated, just after a fairly severe attack of pain, and the urine from the right side was passed loaded with pus cells, while that from the left side was quite clear.

The patient was kept at rest, on light diet, and despite her hectic temperature and the frequent attacks of pain, her general health remained good.

When labor started her temperature was 102° and her pulse 120. Labor was lingering and required the use of chloroform and forceps, as the child's head was very large, but a female fetus weighing 9 1-2 pounds was successfully delivered.

Eight hours after labor the patient had a severe attack of pain in the right side, accompanied by a rigor, with a temperature of 105.4° and a pulse of 140, which, under the conditions, suggested serious complications, but next morning her temperature was normal, and remained so for three weeks. On

examining the flaccid abdomen after delivery, the right kidney was easily felt, distinctly enlarged and tender.

Involution proceeded satisfactorily, and the patient was up and about at the end of three weeks, but the pyuria, though considerably less, persisted. She still had a fairly constant dull pain in the right side and back, with an occasional rise of temperature to 100-101° in the evenings. At the end of six weeks the patient's bladder was again segregated, the result being as before, and a bacteriological examination of the urine again only revealed the presence of B. CC. I therefore decided to try the effect of washing out the renal pelvis by means of a urethral catheter passed through a Kelly's cystoscope. This was done, a weak solution of silver nitrate being used, and there was immediate improvement in the pyuria. This procedure was repeated again in four days' time, and at the end of another week the pyuria had disappeared, and the patient had quite lost the pain in her back and right side. This last symptom had made me suspicious of a renal calculus; but as far as I can learn one has not been passed, nor has she had any further trouble since, and she is at present in good health and again pregnant. I was unable to get her consent to have her kidney skiagraphed.

Pyelitis with pregnancy is more frequent in primiparæ than in multiparæ, and the onset of the trouble in the majority of cases occurs after the fifth or sixth month. Pressure on the ureter, with a consequent damming back of urine in the renal pelvis and a subsequent infection, generally by B. CC., are the chief etiological factors in this condition, and, as we should expect, the trouble is more frequent on the right side, and the very common occurrence of constipation with pregnancy would appear to account for the frequency of B. CC. infection in these cases.

In this regard it is interesting to notice that Olshausen and Hoblein, from the examination of the ureters of pregnant women post-mortem, found that there was nearly always a dilatation of the ureters, and that always the dilatation was more marked on the right side. Comston says: "while the pregnant uterus develops, its borders come nearer to the ureters, which they displace and push over to the bones of the pelvis, upon which it compresses them. The uterus develops much

more to the right than to the left, and inclines to the former, and besides this it undergoes a rotation on its vertical axis, turning in the direction of greatest development—that is to say, to the right, thus freeing the organs on the left side, and exerting a greater pressure on those on the right.”

There are two stages in the evolution of the lesions of a pyelonephritis. In the first, there is retention of urine in the renal pelvis, forming a urinary pocket; while the second stage is represented by the infection of this pocket. This infection may be either an ascending infection from the bladder or an infection from the blood stream.

The fact that the pain and pyuria are intermittent is explained by the pressure on the ureter being intermittent, and in the case recorded this was exemplified by the patient herself noticing that the pain decreased when she lay on her left side, and that after these attacks there was more pus in her urine.

The chief diagnostic difficulty is to distinguish a pyelitis from a cystitis, but pain on palpation of the bladder and frequency of micturition are, of course, absent in a pure pyelitis, and the milky character of the urine is more marked in the latter condition.

With regard to treatment, the majority of cases apparently tend towards recovery with rest and attention to the bowels and urinary disinfection; and in the great majority of cases the pyuria clears up within a week or so of delivery. I know of no reason why it should have been so persistent in the case recorded. It is only in the very severe cases, where the condition is affecting the patient's health that the question of induction of labor, or local surgical treatment for the kidney, comes into question.



CONGENITAL DISLOCATION OF THE HIP.

BY LEONARD W. ELY, M. D.

The history of this subject is a most interesting one. Until within recent years a congenital dislocation of the hip was considered incurable. Mainly by the efforts of Paci, Lorenz, and Hoffa, the radical treatment of the deformity was put on a rational basis. Whitman followed in America, reporting numerous cured cases; but the knowledge spread slowly. In an article written in 1901,* the author called attention to the lethargy of the profession. Not until the visit of Lorenz to this country did the subject attract the attention it deserved. Then followed a furor to operate. Many accidents were reported, largely by unskilled operators, and the Lorenz operation received much unmerited censure. With experience comes skill. Now congenital dislocations are being daily reduced, and the Lorenz operation is coming more and more to be appreciated at its true value; not as an infallible means of cure for all congenital dislocations, but as an operation which, in selected cases, properly performed, gives the best results in the treatment of the deformity.

Cause of Congenital Dislocations.

This is unknown. The deformity occurs in the great majority of cases, roughly, 80 per cent., in the female. We do not even know if it may always be properly called congenital dislocation. Possibly it sometimes occurs during birth, possibly after birth, and before the child begins to walk. On the other hand, we sometimes find the component parts of the joint so deformed that we believe no normal articulation ever existed.

Pathological Anatomy.

The capsule is elongated and its anterior border is drawn tightly across the acetabulum. Sometimes it is constricted like an hour-glass; sometimes it is little more than a cord. The ligamentum teres is lengthened and thinned; after five years of age its existence can rarely be demonstrated. The acetabulum

* American Medicine, June, 1901, p. 600.

in early cases is often present in an almost normal state. Often it is triangular in shape. Later it becomes filled up with fat, fibrous tissue, and cartilage, so that its borders are hard to distinguish. In late cases the head often wears for itself one or two shallow acetabula. The head of the femur varies much in different cases; sometimes it is practically normal in size and shape; sometimes it is more or less distorted; sometimes it is non-existent. As time goes on, the femur head in an unreduced dislocation tends to atrophy and to become absorbed; yet some cases in early childhood present little more than a rudimentary head. The size, length, and angle of the neck of the femur are often changed. The long muscles of the thigh shorten progressively as the deformity increases; especially does the adductor group oppose a reposition.

Symptoms.

The chief symptom of congenital dislocation is a painless limp that has been present ever since the child began to walk. This it is that causes the parents to take their child to the surgeon. Often she will be late in learning to walk. Older children complain of tiring easily. If the dislocation be double the parents will notice that their child has a peculiar gait; perhaps they will describe it as a waddle. The limp is characteristic. It is a lurch to the side, without the backward and forward swing of the body that accompanies hip-joint disease. When the child is stripped we notice that she stands with her lumbar spine in marked lordosis, that she has an abnormally hollow back. The knee on the sound side is slightly flexed; that on the affected side extended. The trochanter of the dislocated femur is prominent. When the child lies on her back the dislocated extremity is found by measurement to be from a half inch to two inches shorter than its fellow. This shortening can be lessened by traction. The trochanter is above Nélaton's line. Motion of the thigh is free in every direction except abduction. Abduction is decidedly limited. If the thigh be flexed and adducted, the head of the femur can be felt on the *dorsum ilii*. The patient is never able to hop on the affected extremity. Finally, a skiagram will show the head of the femur out of its socket, and will give us valuable information as to the shape and size of the head, and as to the length and angle of the neck.

In double dislocation we have no criterion for measurement.

In this class of cases the child will waddle, her perineum will be abnormally broad, and her hips wide. Both heads will be found on the dorsum of the ilium.

So-called anterior or upward dislocations also occur, though less frequently. In these the head can be felt just below the anterior superior spine; the shortening and limp are not so marked; and the exaggerated lumbar lordosis is absent.

Differential Diagnosis.

The diseases with which congenital dislocation is most often confused are tuberculous disease of the hip, coxa vara, old infectious arthritis, and, less often, anterior poliomyelitis.

Hip-joint disease.—This has limitation of motion in all directions, muscular atrophy, and great pain and muscular spasm. It has no actual shortening except in the later stages. The head of the bone is in its socket, and the patient will have walked in early life without a limp.

Coxa vara.—This is essentially a disease of adolescence. Previous to this period the patient will have walked normally. The limp is a limp of stiffness rather than a limp of weakness, as in dislocation. The shortening rarely exceeds an inch, and cannot be lessened by traction on the limb. The head of the femur is in the socket, and the limb is in an attitude of extension, abduction, and outward rotation. Flexion, adduction, and inward rotation are restricted.

Infectious arthritis.—This is distinguished by the history of an acute onset with great fever, pain, swelling, etc. It usually follows one of the acute infectious diseases, especially scarlet fever or pneumonia. One or more scars will be present about the hip.

Anterior poliomyelitis.—Here also we shall probably elicit the history of an acute onset followed by paralysis. The limb is shrunken and ill-nourished; actual muscular paralysis can be demonstrated; and the head of the bone is in its proper place.

Prognosis.

The prognosis is distinctly bad when the deformity is untreated. The shortening increases with age, and the patients, unable to exercise sufficiently, put on fat, and are more or less crippled during life.

The prognosis in cases operated on at a suitable age is good.

The Lorenz operation gives in single dislocation about fifty per cent. of cures, and in double, about twenty-five per cent. Lorenz never claimed much more than this. In the experience of the writer, the prognosis depends more upon the size and shape of the head than upon any other one thing. If the head be approximately normal, the prognosis is good. As a rule, the dislocations backward and upward on the dorsum have a better prognosis than the so-called anterior or upward dislocations.

Treatment.

Two general methods of treatment are open to us, the open and the closed. In the first the capsule of the joint is opened, and the head of the bone is replaced. Sometimes the acetabulum is gouged out; sometimes the capsule is stretched or slit. The thigh is then put up in plaster of Paris for several months. Afterwards, the limb is massaged and moved passively. Usually the operation is followed by some stiffness, especially if the acetabulum has been gouged out.

In the great majority of cases the Lorenz operation is the best, that is, by the closed method. While the basic idea of this operation did not originate with Lorenz, it was he who perfected its details, and by right it is named for him. It is essentially the operation of election, and should almost invariably be tried before resort is had to the knife. The best time for its performance is between the ages of two and five. Before two, the child is apt to soil the plaster dressings. After five, the operation becomes progressively more difficult. In single dislocation the result is rarely good after ten years of age; in double, after seven.

The treatment by this method is made up of three things: First, breaking down by manual force any obstruction to the return of the head to its place. Second, putting the head of the bone in the acetabulum or in the place where the acetabulum should be. Third, keeping the head in place. If these be done properly, Lorenz claims that nature will so shape the tissues in and about the joint that the head will remain in the socket. Many, of whom the author is one, agree with him.

In young children no preliminary treatment is necessary. In older children a preliminary treatment by weight and pulley extension in bed is advisable, perhaps also a division of the adductor tendon.

First stage.—When the child has been anesthetized, the affected thigh is flexed to a right angle with the body, and then is abducted strongly. The resistance to the adductors must be broken down and the abduction carried to a plane somewhat behind the body. The maneuver sometimes requires great force, at all times great care. The skin of the perineum is kept powdered or greased meanwhile to keep it from cracking. A sawing motion with the ulnar border of the hand on the insertion of the adductors will help to tear the muscles from their attachment to the pubes. Next, the thigh is flexed strongly on the body with the leg extended, to stretch the tissues posterior to the joint. Then it is strongly extended.

Second stage.—Replacing the head. Flex the thigh and leg. Then, grasping the pelvis with one hand, the thumb behind the trochanter, abduct the thigh with the other hand, pushing the head forward into place with the thumb. A padded wedge behind the trochanter will make this act much easier. If it be used, great care must be taken not to break the bone by too great force. Sometimes, when the head first slips into place it does so with a distinct click. More often it goes in gradually, and, as we abduct, we see the hollow under the femoral artery slowly fill out. When once the dislocation is reduced it may be produced and reduced easily at will, each time with a distinct jolt or click. By further abduction, the anterior part of the capsule is well stretched. Then the child is rolled on the opposite side and the femur head is forcibly pushed into the acetabulum to try if possible to deepen it. When the head is in its place, the ham-strings will be contracted, flexing the knee. They must be fully stretched before the plaster is applied. This completes the second stage.

Third stage.—A one-legged covering of shirting, reaching from the thorax to the ankle and provided with a scratch bandage, is applied. Then the bony prominences of the pelvis and thigh are well padded with interlining or corn-plaster felt, and the abdomen, pelvis, and thigh are snugly bandaged. The child, still anesthetized, is placed upon the pelvic rest, with her head and shoulders resting on a padded box or shoulder rest, and held by an assistant. Another assistant holds the lower extremities, standing between them, with the affected thigh in the position of greatest stability, namely in superabduction of the flexed thigh, and gives his entire attention to

that task. The operator, having assured himself finally that the head has not slipped out, then proceeds to apply the plaster spica. This must fit snugly over the pelvis and the thigh. It is made about an inch thick over the pubes, and is trimmed out so as to have a concave upper border in front, leaving a large part of the abdomen bare. Below, it reaches to the inner condyle of the femur, and permits full motion at the knee. Lastly, the superfluous padding and bandage protruding past the edge of the plaster is trimmed away, and the shirting turned up over it so as to make a covering as well as a lining.

The child will probably suffer considerable pain for two or three days after the operation, but this can be relieved by ice on the perineum and by small doses of morphine. We are not alarmed by the great ecchymosis of the perineum; but we watch the circulation carefully in the bandaged leg. If this be affected the plaster must instantly be removed. After the first few days the child is encouraged to walk. Soon she will learn to walk or even to run and play about. The shoe on the foot of the operated limb is raised two or two and a half inches.

In this spica the child remains from four to seven months, depending on the stability of the reposition. The parents must keep her scrupulously clean, using the scratch bandages to give her a dry rub beneath the plaster, once or twice daily.

At the end of this time the plaster is carefully removed, and the posture of the limb is modified, that is, the thigh is brought somewhat downward and forward. A new spica is then applied. This spica should be worn about the same length of time as the other. With it the high shoe usually will not be necessary.

With double dislocation the operation is similar.

The operation is not without its dangers. One or two cases of gangrene have been reported; the neck of the femur has been fractured; and nerve palsies are fairly frequent. In two of the author's cases the anterior crural nerve was paralyzed. Both paralyzes recovered entirely. If the age limit is not overstepped serious accidents will be few.

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THE TREATMENT OF SURGICAL SHOCK.*

BY JOSEPH H. FOBES, M. D.

According to Crile, shock is an exhaustion of nerve centers, especially the vasomotor and possibly the cardiac centers, due to too frequent and too powerful afferent stimuli resulting in a more or less rapid fall in blood pressure.

Collapse is sudden fall of blood pressure due to hemorrhage, injuries of vasomotor centers, or cardiac failure. Clinically the two are hardly distinguishable.

The preventive treatment of these conditions is very important and consists of a careful preoperative history and examination. The predisposing causes of shock are:

1. Secondary anemia.

A careful blood examination with appropriate treatment is indicated. Bloodgood of Johns Hopkins regards this as of extreme importance.

2. Diabetes and nephritis.

A careful urinalysis is necessary.

3. Alcoholism.

All alcoholics take anesthetics badly and the blood pressure is lowered secondarily by alcohol.

4. Cardiac disease.

The chest should be examined for both heart and lung conditions and the blood pressure should be ascertained by a tonometer. High saline enemata given once or twice a day are of great use.

5. General infection.—Septicemia and pyemia.

6. Disordered metabolism—poor nutrition and auto-intoxication.

7. Physical conditions always predispose. The surgeon should impress the patient with confidence and avoid any semblance of anxiety. If necessary the actual skin preparation may be performed after anesthesia but a tactful nurse usually renders this unnecessary. All the surroundings—room, etc.—should be cheerful and uplifting.

Aconite, gelsemium, and other drugs are of great use here. Encourage the family physician to be present before the opera-

*Read before N. Y. Hom. State Society, Semi-Annual Meeting, Rochester, October 16, 1906.

tion, and remain through if possible. The patient appreciates his presence. The use of strychnine and other stimulants is harmful and gives a false strength which gives way under the stress of the operation and causes a bad reaction.

The anesthetic ordinarily must be left to the competent anesthetist. But remember that as a rule ether is the safer, producing as it does a high blood pressure while chloroform lowers the vascular tone. Chloroform with oxygen is much safer than chloroform alone, and in some cases oxygen should be combined with ether where there is necessity for a still higher pressure. Local anesthesia, when complete, is very useful but when pain is felt, or the patient becomes frightened, general anesthesia is much to be preferred.

Avoid extreme degrees of heat or cold. In the operating room do not allow cold wet towels to remain on the patient. Warmed blankets should always come next the skin.

Let the operation be as short as is consistent with good work. Avoid bruising the tissues, especially large nerve, which may be cocainized before section; use the sharp knife whenever possible.

Last but not least, stop all hemorrhage. The bloodless operation rarely causes more than a slight degree of shock; but there are exceptions. When real shock supervenes, do not fill the patient full of hypodermics. That is bad polypharmacy and is not countenanced by the best men of either school.

Bloodgood says, "At the present time the consensus of opinion favors a treatment which is simple and on the whole passive." It goes without saying, that any active hemorrhage must be stopped immediately. The patient must be kept quiet, flat on the back, surrounded with warm blankets and carefully prepared and applied hot water bags. If it can be applied without undue excitement keep the patient in a hot pack. One doctor applies steamed ears of corn about the patient or uses the electric light bulbs under the clothes, and hot mustard cloths to the precardium. The position is elevated with the head low. The introduction of saline solution is indicated in practically all cases as shock is usually accompanied by more or less hemorrhage. This may be given simultaneously by high enema hypodermoclysis and infusion into the vein of the arm. Give as much per rectum and by hypodermoclysis as can be absorbed. No harm can come from it as the tissues will take

up only as much as is needed. Intravenously the quantity may vary from 500 to 1000 c. c. This may be given slowly in mild and rapidly in critical cases.

The saline solution used at Johns Hopkins is composed of sod. chloride, .9; calc. chloride, .01; potass. chloride, .03; aq. dest. chloride, 99.06.

This is the stock solution and 50 c. c should be added to 950 c. c. of distilled water in a flask and immersed in boiling water before using.

Adrenalin solution may be used—15 minims of a solution to 1000 c. c of normal salt solution. Do not give more than 500 c. c. If possible use a tonometer to record the pressure and when normal is reached discontinue. Precardial pain is also a contraindication for further use.

In shock the patient bleeds into his veins, therefore, cord the limbs and bandage the abdomen to keep all the blood in the deeper arterial vessels. Dr. Crile's pneumatic suit accomplishes this somewhat more easily.

At the Flower Hospital enemata of black coffee and whisky, teaspoonful to the pint, given high, were found useful.

The drug most advocated is morphine, especially when pain is present. Morphine is a nerve sedative. It inhibits the splanchnics and conserves energy and may check any further untoward afferent impulses to the affected centers. The rest is beneficial at any rate. This is given hypodermically in 1-8 grain doses. Morse, evidently with the idea of overcoming the cardiac paralysis, combines morphine 1-4 grain with digitalin 1-50 grain hypodermically. Digitalis infusion $\bar{\text{iii}}$ to O i saline. Our late Dean Helmuth's favorite remedy was:

R	Veratrum alb. θ	}aa gtts. x
	Camphor θ		
	Aqua.....		$\bar{\text{z}}$ iv
	Sig. teaspoonful every 15 minutes.		

Adrenalin acts on the muscular coats of the arterioles directly and also on the vasomotor centers. Its use has not been proven as yet, but in many cases it has seemed to be of use. It is a little dangerous to lash a tired nerve center to its fullest capacity but perhaps it may be wise if the horse is near the top of the hill. Strychnine has too intense an action on the nerve centers and has been practically excluded from "shock" remedies. It is an excellent respiratory stimulant, however.

The dose of adrenalin is 10-15 minims hypo or 15-30 minims by mouth every thirty minutes as its action lasts only that time. Strychnine should not be given stronger than 1-60 hypo. Both these drugs should be given in conjunction with morphine to avoid injury to the vasomotor centers.

Sparteine sulphate 1-4 to 1-2 grain hypo has been advocated but will bear closer scrutiny. It first slows the heart for a short time and then hastens its action and the volume of the pulse, thus increasing blood pressure. Its action on the whole is depressant and its use is not proven.

Nitroglycerin is absolutely contraindicated for it relaxes arterial tension, increasing the shock. In purely psychical shock, Morse advocates asafetida vs. bromides per rectum; but with our homeopathic therapeutics we have better remedies for this form of shock, which, to tell the truth, needs mental treatment more than anything else. I recall one case where pulse remained well above 120 until a tactful special nurse brought it down to normal in a few hours.

Oxygen is a useful adjuvant but its use has a bad effect on the lay mind who associates it with the last moments.

Camphor, veratrum alb., and carbo vegetabilis all present the picture of shock and may be thought of.

China and arnica have their chief field of usefulness later on, and are grand drugs—the one for the results of hemorrhage, and the other for trauma.

Hypericum and aconite must not be forgotten where nerves are injured.

Surgical shock is by far too common a condition, but as Bloodgood says, "It is by no means a simple problem to investigate either experimentally in the physiological laboratory or clinically in surgical practice." After death the only condition proven is an excess of blood in the splanchnic veins. In our hospitals let us use not only urine examinations and hemanalyses, but let us measure carefully the blood pressure before operation and after, thus forestalling shock or treating it with the appearance of the first symptoms.

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AN INTRODUCTION TO THE STUDY OF ANTERIOR COLPOTOMY AND COLPORRHAPHY.*

BY WM. CASH REED, M. D., C. M. EDIN.

It is now some years since I spent a holiday, so to speak, in Berlin, with the object of acquiring the technique of some operations for which Professor Martin had become famous. That known as anterior colpotomy claimed special attention, and it is this, with the minor operation of colporrhaphy, which I propose to describe.

It was not immediately, nor was it indeed for a long time afterwards, that it became obvious to me that this method presented conspicuous advantages, in many cases of pelvic mischief, over and above those which attend the more familiar and time-honored operation of celiotomy or abdominal section. I hope to show, however, that in a certain class of cases, the range of which is not very restricted, colpotomy in the sense in which I use it offers very great advantages to abdominal section.

With regard to colporrhaphy, let me at the moment merely state that as the greater contains the less, so colpotomy embraces the lesser colporrhaphy, which is merely a stage of the former, and may be classed as a minor operation, inasmuch as in it the peritoneum is not opened.

Colpotomy means, of course, cutting into the vagina. Its object in this case is to deal with the pelvic contents. The position of the cut is along the anterior vaginal wall, and its direction is vertical, not horizontal. This latter point is the crux of Martin's operation. It is but fair, however, to state that this operation originated with Dührssen, of Berlin, and was subsequently adopted by Martin.

The Operation.

The patient, for a day or two beforehand, is treated with antiseptic tampons. I generally use ichthyol glycerine, in the proportion of one part of the former to eight of the latter. An aperient is given the night before, with copious enemata just before the operation. If there is any cardiac weakness, and in some cases of neurasthenia, it is well to give 1-100 grain

* British Hom. Society.

of strychnine hypodermically for a day or two prior to surgical interference.

The patient is placed in the lithotomy position and Clover's crutch adjusted with the circlet of leather below the knee, not above, as one so constantly sees done in error. The vulva and adjacent parts are now washed with soap and water and even lightly scrubbed with a nail brush. It is best to have had the parts shaved, or at least denuded of hair by scissors. As to the soap, everyone probably has his own pet kind, else how can one explain the immense variety of surgical soaps on the market? Personally, being addicted to simplicity, I always use some old-fashioned grandmother's soap, preferably that containing a good proportion of turpentine. If it happens to be at hand the pure soft soap of the Pharmacopeia is excellent. Having washed off the lather, and seen especially to the cleansing of the vestibule, I now irrigate the vagina with hot sterilized water. I would draw attention specially to the cleansing of the vestibule, for if any septic matter be retained there, it is almost sure to be carried into the bladder in the course of operation, or afterwards on the end of a catheter. I mention the former because it is often desirable to use the catheter whilst operating to ascertain the limitations of the bladder, or to make quite sure it has escaped injury.

Now adjust a weighted speculum—we use Auvard's—seize the anterior lip of cervix with a uterine hook which has a long handle. Dilate the uterus, after first ascertaining its exact position and size with a sound, by means of Hegar's or other dilators. Personally, I like nothing better than to commence with fine ordinary silver urethral bougies, and when the canal is sufficiently patent to continue stretching, by means of silver uterine dilators. May I lay stress on stretching as distinguished from tearing. Nothing is easier than to tear. It requires time and patience to dilate. I have learned that the key to the latter is to have the dilators steeped in boiling water. The uterus yields readily to the combined stimulus of heat and pressure. There is no need whatever to use vaseline or any kind of grease, which is only messy and obscures one's view.

When the uterus is sufficiently dilated use the curette freely, finally washing away débris with a current of water through a pipette. The water and the pipette are used throughout the operation. The latter is held at one side of and above the

vulva, and the water flows from it just sufficiently to keep the field of operation clear of blood. Perchloride of iron tincture may now be thrown into the uterine cavity, about 20 minims by means of a syringe, but the force of this injection must be very gentle.

What is known as Martin's hook-sound is now introduced and locked in the manner described. In point of fact this instrument was invented by Dr. Orthmann, Professor Martin's assistant at the time I speak of, to meet the exigencies of the case, and without it it would be almost impossible to carry through the procedure.

A uterine hook now grasps firmly the anterior vaginal wall about half an inch below the meatus urinarius. This hook is pulled up vertically by an assistant and steadied, whilst at the same moment the handle of the hook-sound is depressed by a second assistant. The result is that a long ridge of mucous membrane from the meatus to the cervix is put on the stretch and stands out more or less in relief. It is well to reassure one's self at this stage by calling to mind that the little maneuver described has really had the effect of drawing the mucous membrane away from the bladder beneath. In point of fact it emphasizes the depth of the bladder from the surface. It might otherwise seem as though the bladder itself were drawn forward, and that this proceeding was the most likely one to insure its being wounded beyond the shadow of a doubt.

An incision is now made from the hook to the termination of the mucous membrane at the cervix. As to the safe depth of this incision, it is impossible to fix any rule. In persons who have borne many children the mucous membrane is often very thick, perhaps one-sixth of an inch. In other and attenuated patients it is often very much thinner. The two sides of this vertical incision are now further separated from one another and from the cellular tissue beneath. This is best done, I think, with the finger-nail whilst the cut edge of the mucous membrane is held forwards and outwards by a pair of dressing forceps. As one approaches the cervix there are pretty strong bands attaching the mucous membrane to the latter; these may be divided with scissors. The bladder is now generally in full view, and is to be gently eased off the body of the uterus by the finger, slowly, steadily, and persistently.

Eventually it is tucked under the symphysis pubis. When there it is retained in that position by a retractor. Now by carefully depressing the handle of the hook-sound the fundus uteri may be felt, if it cannot be seen, and the vesico-uterine fold of peritoneum comes into view.

This structure is generally described in text-books by some such terms as these: "glistening," "a pellucid structure," with a "little fluid to be seen through its two layers," and so on. I cannot say that Nature has been kind enough to demonstrate it with such precision in my cases, but as there can be nothing else than this structure at this stage of operation preventing one's finger entering the pelvic cavity, I have cut on, and eventually through the barrier, which presented itself. Perhaps nothing special occurs after this incision is made, perhaps a Fallopian tube or piece of mesentery appears at the wound. The upper edges of the peritoneal cut should be caught by a Spencer-Wells forceps, and I may add that it is important not to make the cut itself too extensive laterally.

Now remove the hook-sound and grasp the uterus with a hook about the junction of the fundus and body. Then place another hook further on towards the fundus, and if necessary a third even, and exercise gentle traction forwards and downwards. It depends mainly upon the bulk of the uterus and the density and extent of inflammatory adhesions how soon the uterus will yield and appear outside the vulva. The adhesions referred to are broken down gradually, always with the finger. When the uterus becomes procident the ovaries and tubes on either side will accompany it, lying at a slightly higher level. This is not, of course, their normal position, but is explained by the fact that we are now looking at the under, not the upper, uterine surface.

The operation is now continued to such an extent as may be necessary; ovaries may be ligated and removed, the same may be said of the tubes, one or both, and if a fibroid is visible it can be removed, and finally, if the uterus is malignant or chronic metritis be advanced to an extent which is incurable, the whole organ may be excised.

Whatever then may have proved essential having been accomplished, the cervix is again caught by forceps and the fundus is pressed upon. Now a kind of cradle-rocking takes place, the movement *à bascule*, as the French call an allied

movement, when the uterus slips back into the pelvic cavity. The long vaginal cut has now to be repaired, and this is done in two stages. The first consists in stitching the cut edges at the greatest depth to the body, not the fundus, of the uterus, including in this ligature both upper and lower edge of peritoneum. Two stitches should be employed to effect this. Now two more should be fixed into the cervix, involving the cut edges of the vagina on either side at the same time. The second stage consists in making a running continuous suture of thinner catgut along the whole length of the cut with accurate apposition of its edges. The whole wound now looks very neat. The vagina is lightly packed with cyanide gauze with the object mainly of assisting to support the uterus. A T-bandage is finally adjusted and the patient removed to bed.

The subsequent treatment is simplicity itself. The gauze is removed the second day and probably it will be quite unnecessary to apply any further dressing, or even to employ any douching. The patient generally passes water naturally in the course of a few hours. It is best, I think, to elevate the foot of the bed with blocks of about six inches, just as is done in cases of vaginal hysterectomy by the ordinary method. Thus the pressure on the severed peritoneum is reduced to a minimum. I ought to have said no drainage whatever is necessary. The patient is up in between two and three weeks.

Thus, gentlemen, I have endeavored to describe the operation known as anterior colpotomy. I now come to say a few words upon anterior colporrhaphy.

Anterior colporrhaphy, or suture of vagina, is performed sometimes for the cure of cystocele, but chiefly for the fixation in a normal position of a retroflexed or retroverted uterus. The earlier steps of the operation are exactly those of the one described, but in colporrhaphy one stops short of opening the peritoneum, in fact, a stage or two before this membrane is reached. The bladder is freely stripped from the cervix and uterine body, but not quite to the same extent as formerly described. When the uterine body is freely exposed thick sutures are placed so as to include the cut in the mucous membrane on either side and to transfix deeply the uterine body. Then the long and thinner thread before described is used to adjust the rest of the cut raw surface throughout its whole length. The after-treatment is the same in each case. As the

two thick sutures referred to above are drawn tight it is beautiful to observe how the retroflexed or retroverted uterus assumes the normal anteflexed position. I must confess, however, that I do not quite understand why the mucous membrane of the anterior vaginal wall should be competent to sustain in the right position a hitherto tilted-back uterus. Yet it does so. The explanation is, in part, doubtless to be found in the fact that the utero-sacral ligaments which support the uterus are still intact and are competent to perform their function. One other point is interesting and significant in this connection, and throws a side light on the situation, viz., that a prolapsed uterus (and retroversion is the first stage of prolapse), comes down secondarily to the bladder and rectum, notably the former. At least so I think, and the remark is based upon a frequent observation made in the course of pelvic operations when the patient is in the lithotomy position and under an anesthetic. When the patient strains in the early stage of anesthesia or in coughing or vomiting, the stress of pelvic pressure is spent first of all on the bladder and the rectum, and these prolapse first and foremost. This is an everyday observation, and I have often pointed it out to medical friends assisting. So definite is this result of straining that it is of no uncommon frequency for the os-uteri, which has hitherto been clearly visible, to become covered up and completely hidden by prolapse of the bladder in front and of the rectum behind. In short, of the three viscera the uterus is the last to descend. The anterior wall divided in the operation would, of course, contract in healing and form a firm scar, thus hindering cystocele. Thus with the cure of the latter and a firm *point d'appui* for the uterine body at the point of its attachment to the vagina, the uterus is less competent to revert to its abnormal position. These remarks I throw out at all events as the explanation.

I would refer very briefly to three points:

- (1) Certain individual cases which have undergone operation, and in which marked success has followed its adoption.
- (2) Secondary hemorrhage occurred in one case, due to venous oozing. It was checked by tamponade, etc.
- (3) The advantages of the operation consist chiefly in (a) absence of shock; (b) clear field of operation.

(4) As regards pregnancy, the crux of the operation is in fixing the body and not the fundus of the uterus.

I would merely remark with regard to diseases of the Fallopian tubes, that their appearance, character, and pathology vary immensely, e. g.:

(1) Sausage-shaped, as in tubercle.

(2) Pea-pod, due to irregular cicatricial contraction.

(3) Dilated, which lend themselves to plastic operations.

(4) Stenosed, caused by the gonococcus, just as the gonococcus causes stenosis of the male urethra.



FORCEPS VERSION AND CRANIOTOMY.*

BY GEORGE L. BRODHEAD, M. D.

I will call attention to a few of the more important points with reference to three obstetrical operations. Realizing that successful work depends very often upon the strict observance of apparently small details, it is my purpose to emphasize certain features of the operative work.

Forceps.—There can be little doubt that the forceps operation has saved more lives than any other. The operation is performed to-day more frequently than ever before, and we can assert, I think, without fear of contradiction, that better results are being obtained, not only as regards mortality, but morbidity as well. These results have naturally followed increased experience, by which we have learned to imitate as far as possible natural delivery, the latter involving slow careful extraction with due regard to the soft parts of the mother, and strict observance of the details of surgical cleanliness.

Indications for and Classification of Operations.—In general one may state that when the head is at or below the brim of the pelvis, in the absence of pelvic deformity or complication, such as prolapse of the cord or placenta previa, and when the natural forces are insufficient to effect delivery, or where for any reason the life of the mother or child is threatened, the forceps is indicated. Forceps operations are classified as high, median, or low. In the high forceps operation the blades are applied to the head lying above the brim, in the median operation the head has engaged in the brim of the pelvis, while in

* Read before the Eastern Medical Society.

the low forceps operation the head has entered the pelvic cavity.

The High Forceps Operation.—This may be said to be a strong rival of podalic version. The question of supremacy will probably never be decided, for there can be no fixed rule for choice between the two operations. The operator must be guided in each instance by the relative size of the head as compared to the pelvis, the quantity of amniotic fluid, the protraction of the labor and lastly, by his personal experience. With normal pelvic and fetal head measurements, and especially when the head is relatively large, or when labor has been protracted with early escape of the amniotic fluid, it is my belief that the high forceps operation is much to be preferred. With careful use of the forceps the head can be molded through the pelvis, whereas in version no time for molding is allowed. The patient is prepared for operation in the usual way, the bladder and rectum are emptied, and ether or chloroform is used. The membranes are ruptured, the position of the head is definitely made out, and after the cervix has been fully dilated with the hand, the operator is ready to extract. Complete dilatation of the cervix is essential, for if strong traction is made through a partially dilated cervix, not only is there great danger of rupture of the uterus, but the child suffers also by reason of the tremendous pressure. The ordinary long forceps may be used and will in the majority of cases be sufficient to complete delivery. The axis traction forceps of Tarnier is, however, of the greatest practical value in this operation, and while one can as a rule safely deliver without it, in many cases the instrument is a necessity, and extraction is completed with greater safety to mother and child, as well as with greater ease to the operator. Traction is made intermittently, slowly and carefully, plenty of time being allowed for molding. Too great emphasis cannot be laid on the importance of traction in the proper axis. Many children are lost each year through the failure to recognize this most important point. Again, it must be remembered, that when the forceps blades slip, the head must be seized in a different diameter or traction made in a different axis, and, the blades continuing to slip, another variety of forceps must be used, or the operation of version resorted to. Slipping of the forceps frequently results from traction in an improper axis, or from faulty application of the blades.

The high forceps operation is to be undertaken with a full knowledge of its dangers, for I know of no other operation which may prove so difficult, and which may be attended with greater danger to mother and child.

The Median Forceps.—Operation differs from the former in that it is usually easier of accomplishment, the vertex being well engaged in the pelvic brim. The various points already referred to in speaking of the high forceps operation apply equally here.

The Low Forceps Operation.—Is by far the most frequently used, and as a rule it is the easiest of all. The indications are practically the same as for other forms of operation and the danger in a properly conducted operation is practically nil. The question often arises, 'How long shall we wait in the second stage of labor before applying forceps?' My rule in normal labors is to use forceps if after one or one and a half hours there has been little or no advance. If the patient is evidently exhausted one hour is, in my opinion, a sufficiently long time to wait. If the labor has been short, and the patient is in good condition one and a half hours would be ample time to allow. In cases of dry labor, especially in primiparæ, as a rule I apply forceps, if after one-half hour in the second stage there has been no advance. With regard to the variety of forceps to be used, there can be no question as to the superiority of the Tucker modification of the McLane forceps. The solid blades are more easily introduced, applied, rotated, removed, and mark the child less than any other instrument. At the same time, they do not slip in the vast majority of cases. Not a single instrument is perfect for all cases, but from personal experience I have found the solid-bladed forceps to be the most valuable. In my teaching at the New York Post-Graduate Medical School I have met a number of men who have considered the forceps operation as practically an accomplished fact, after they have succeeded in merely applying the blades to the sides of the child's head. There can be no greater fallacy than this, for with the proper application of the forceps the work in many instances has but just begun. The old method of extracting a head by means of several violent tractions has been fortunately succeeded by the slow, careful, deliberate effort to remove the head from the soft parts as nearly as possible in the way in which nature would accomplish

the same result. The low forceps operation, when properly done, is practically devoid of danger to both mother and child, and the patient is saved many an hour, perhaps, of needless suffering. The old excuse that "the perineum was torn because the forceps was used" is no longer tenable. On the contrary, there are many cases where by the early and intelligent use of forceps laceration of the perineum is certainly avoided. Where edema of the soft parts is marked and the child must be quickly extracted in order to save its life, blame must not be attached to the forceps operation, because laceration under such circumstances is almost unavoidable. With regard to anesthesia for the low forceps operation, we have generally used chloroform, ether only occasionally. While anesthetics are at times unnecessary, as a rule light anesthesia is desirable. In cases where the head is large, and the outlet small, or where a delivery must be accomplished quickly, the operation of episiotomy has a distinct sphere of usefulness, and I have employed it in a number of cases with excellent results.

Rotation with Forceps in Occipito-Posterior Positions.—In October, 1900, the writer presented a paper before the New York Obstetrical Society on the treatment of occipito-posterior positions. At that time, no text-book recommended the operation of forceps rotation, and, in fact, many condemned its use outright. A number of the gentlemen present at the meeting had, however, been in the habit of performing the operation, and since that time the practice of rotation with the forceps has become more and more universal, and the text-books have devoted considerable space to the description of the operation. Although it would be impossible to enter into the details of the operation at the present time, the writer wishes again to call attention to and emphasize the entire feasibility and great practical importance of the operation, which after extensive use is becoming more and more a recognized procedure in the treatment of these cases.

Version. Definition and Varieties.—Version may be defined as the turning of the fetus in utero in such a manner as to bring about a change in presentation. While version often occurs naturally, constituting what is known as spontaneous version, it is in the manipulative or operative form that we are especially interested. Version may be complete, as for example, when the head is substituted for the breech, or

partial, when, for instance, the presentation is changed from face to vertex. Again, version may be classified as cephalic, pelvic or podalic, depending upon the particular part of the fetus which is brought over or into the internal os. Again, version may be performed in three different ways, the terms external, internal, and combined, indicating the procedure by which turning is accomplished. Thus in external version, manipulation is entirely external; in internal version the entire hand is passed into the uterus, while with the other hand the effort is made to facilitate version by manipulation through the abdominal walls. In combined version, two fingers of one hand are introduced into the cervix, version being assisted by the other hand, used externally.

Cephalic Version.—The indications for this operation are malpresentations such as face, brow, shoulder, and transverse, and the operation may be performed for breech presentations as well. The operation may be performed by any one of the three methods, external, internal, or combined. Let us consider for a moment the operation known as "external cephalic version." To succeed in turning the child by external manipulation alone, a number of favorable conditions must be present. The abdominal and uterine walls must be relaxed, the amount of amniotic fluid present must be sufficient to allow of a moderate degree of motion on the part of the fetus, but hydramnios would of course make turning impossible.

It will be apparent to all that the operation can be successful, as a rule, only when undertaken prior to or during the early part of labor, before the amniotic fluid has escaped, and while the intervals between uterine contractions are comparatively long. Again, one must have had a sufficient experience in ante-partum diagnosis to recognize the position in which the child is lying. The patient, after emptying the bladder, is placed upon a table or firm mattress, her limbs are drawn up, and the confidence of the woman is gained by assuring her that she will suffer no pain or discomfort. For brow or face presentations the operator will follow the technique of the Schatz method, well described in all of our text-books, and therefore unnecessary to repeat here. For oblique or transverse positions the head is to be slowly and carefully moved downward to a point over the pelvic brim. This procedure is to be done very gently in the easiest and most natural way,

endeavoring to preserve as far as possible the natural flexion of the head.

To come now to the consideration of cephalic version for breech presentation, we find that the fetal mortality in all cases of breech presentation is about 10 per cent. If we were to add to the number of infants who are still born the number of those who die within a few hours of birth from asphyxiation, atelectasis, etc., the percentage will be much greater. The figures are naturally larger in primiparæ than in multiparæ. Therefore, as the fetal death rate is much higher than in vertex presentations an effort should be made to correct, if possible, the faulty presentation. No harm can result if the attempt fails, whereas, if the effort to turn is successful, a great advantage has been secured. Within the last few weeks I was called to see a patient who was thought to be in labor at full term with her sixth child. One month previous to this time I had tried to change a breech presentation into one of the vertex. As the presentation was still breech I again tried to turn, and version was accomplished with surprising ease, much to the gratification of the patient and myself. Pads were placed at either side of the uterus and an abdominal binder applied for the night, but as the patient felt very uncomfortable with the binder on, it was removed on the following day. Although labor did not begin until one week later, the position remained vertex and delivery was uneventful. By careful manipulation the head is gently moved toward the pelvic brim, flexion being kept up by pressing the head to the side opposite that to which the back of the child lies. Thus in L. S. A. - the head is pressed downward to the right, and in R. S. A. - vice versa. I have performed external cephalic version a great many times, and have never seen accident result from it.

The combined method of cephalic version is indicated only in shoulder presentation. When the membranes are intact or have been recently ruptured it may be possible to press the presenting shoulder upward and to the side opposite to that in which the head is lying by using two fingers of one hand, while with the other hand, the head is crowded down over the brim.

Internal cephalic version may be used rarely, in converting a brow or face presentation into a vertex, but as a rule when the operation is attempted labor has progressed too far and

the head is too well fixed in extended position to allow of rotation on its transverse axis.

Pelvic Version.—So-called, may be indicated in malpresentations such as transverse or oblique, where the operator has failed to perform a cephalic version. Again, the operation may be used where breech presentation is more desirable than vertex, as in some cases of flat pelvis. In flat pelvis podalic version is generally more successful than high forceps, and believing that breech presentation in such a case is more favorable than vertex, I succeeded in one case of flat pelvis, several years ago, in converting a vertex presentation into a breech, following this by inducing labor at eight and a half months. Labor was uneventful, the patient being delivered of a nine and a half pound child. Generally speaking, pelvic version will be performed by the external method, the child being carefully turned by gentle manipulation. Internal pelvic version may be used in rare instances where the shoulder presents. This method was original, so far as I know, with the late Dr. E. A. Tucker, who used it successfully in a number of instances. Take for example a case of left-shoulder presentation, dorsum anterior, head to the right. Dr. Tucker suggested pelvic version by carrying the right hand up along the back of the child until the breech could be seized. Then the breech was drawn downward, while with the left hand the head was pushed upward. The operation has the advantage that the version can be done more easily by seizing the lower end of the trunk rather than the foot, and there is practically no danger of a prolapse of the cord, which complication is not uncommon in performing podalic version. If, after bringing the head over the brim, it is desirable to seize a foot and extract, it is an easy matter to do so.

Podalic Version.—Is by far the most frequently used, the indications being very numerous. Among the latter are the following: malpresentations, deformed pelvis, prolapse of the cord, uterine inertia, eclampsia, placenta previa, accidental hemorrhage, sudden death, etc. As a rule, podalic version will be performed by the internal method, but in the one instance of placenta previa the combined method of Braxton Hicks may be used. In hemorrhage from placenta previa, when two fingers can be passed through the cervix and when there is still a fair

amount of fluid in the uterus, it is possible in some cases to perform podalic version, the head being pushed upward to one side, while with the other hand the breech is pushed downward over the pelvic brim. When the foot is felt through the membranes, the latter are ruptured and the operator brings the foot down through the cervix into the vagina. The hemorrhage having been controlled by tamponing, so to speak, the lower segment of the uterus with the breech, labor can be allowed to proceed as in a normal breech case. In cases of this kind, however, where formerly I advised combined version I should now attempt to control the bleeding, and at the same time dilate the cervix by the use of a modified Champetier de Ribes bag. To exploit the merits of this bag would take more time than we have at our disposal. Although an anesthetic may not be required in some cases, as a rule it will be necessary.

Internal podalic version has been so widely used and so thoroughly written up, that I will devote but little time to it, although it is the most important form of version: The patient is prepared as for any major obstetrical operation, is put under deep anesthesia, and the operator decides upon the hand which he will use. As a rule one will prefer the use of the hand the palmar surface of which will be turned toward the abdomen of the child. Thus, in R. O. A. the right hand will be passed into the uterus, in L. O. P. the left hand. The question often arises, "Shall one or both feet be seized, and, if only one foot, which one?" Where there is no need of haste, and where the cervix is only partially dilated, it is better to seize one foot and that should be the anterior, if possible. Both feet may be seized if there is need of haste and the cervix is well dilated. There can be no question that version is frequently performed where craniotomy would be far better and in speaking of craniotomy I will refer to this again. Rupture of the uterus is the one great danger in podalic version, and it is the cause of death in many women every year. Rapid extraction of the child through a cervix only partially dilated has frequently resulted in rupture of the uterus and death, and this is especially true in placenta previa, where the lower segment is unusually soft and very easily torn. Where an arm has prolapsed, a tape or piece of gauze should be tied about the

wrist and very little attention paid to it, for if the child is turned the arm will be carried up into the uterus. Sufficient traction on the tape can be made to prevent the arm from becoming extended at the side of the head. Time spent in trying to replace the arm is simply wasted, for if the child can be turned, the arm will take care of itself, while if decapitation is necessary the arm can be used to advantage for traction. In breech presentation with limbs extended in front of the body it may be necessary to perform partial podalic version. In this case, the hand of the operator is passed up into the uterus, along the posterior surfaces of the thighs and legs until the anterior foot can be seized, when the leg is made to flex on the thigh and the foot is drawn down through the cervix. This procedure is better, I think, than the application of forceps to the breech, or the use of a tractor such as a blunt hook.

Craniotomy.—For many years I have been convinced that the operation of craniotomy should be performed much more frequently than it is, notwithstanding the fact that Cæsarean section and the induction of premature labor have greatly diminished the necessity for the operation cases of pelvic deformity. Version and forceps are elected in many cases where, we believe, craniotomy would be attended by far better results. It is not my intention here to discuss the absolute and relative indications for the operation, for these are fairly well understood, but it is my purpose to call your attention to a class of cases where Cæsarean section is out of the question and where craniotomy is easier and safer, as a rule, than either forceps or version. Take, for example, the case of a patient who is found at full term with a large child, presenting by the vertex. Labor goes on for a great many hours and then, as it has become evident that the woman cannot deliver herself, the forceps is used. Repeated efforts to extract fail, the blades by slipping may have fractured the skull, and the fetal heart stops. The lower segment of the uterus has by this time become thinned and the operation of podalic version is attended with great danger of rupture of the uterus. How often, in instances such as this, the operator determines upon version and succeeds by desperate effort in delivering the woman only after rupture of the uterus. Only a short time ago, in speaking of the subject, a friend said, "If I had only had a

cephalotribe in a case recently I think the patient could have been saved." In a few words, it is my belief that in protracted labor with vertex presentation, where the forceps has failed to extract and the child is dead, craniotomy is, as a rule, easier and safer than podalic version. Again, in a case of small pelvis, podalic version is done and the body is extracted with more or less difficulty. The after-coming head cannot be extracted, and in some instances, the operator has become so desperate that he has pulled the body away, leaving the head in utero. There are many instances where the child is dead, and yet in spite of great difficulty forceps and version are persisted in until severe lacerations are inevitable. My contention is that when the child is dead, craniotomy is to be thought of, not as a last and desperate resort, but as perhaps the easiest, quickest, and safest method of delivery. I can recall a great many cases in my experience and in my teaching work where I believe that craniotomy would have saved the patient's life had the operation been performed instead of persisting in delivery by forceps or version. The preparation of the patient for craniotomy is that usual for a major obstetrical operation. The woman is put under deep anesthesia and after complete dilatation of the cervix the Tarnier basiotribe is used. This instrument is by far the best for crushing and seizing the fetal head. The cranioclast seizes only one side of the head, while the Tarnier basiotribe crushes the entire skull, vertex and base. Care should be exercised after crushing the head at the brim, to turn the instrument in such a way as to bring the long diameter of the crushed head into the transverse diameter of the upper pelvis where there is more room. The finger should be kept against the sharp edges of bone in order to prevent laceration of the vagina, and extraction should be made slow and gradual, in order to prevent laceration of the soft parts. Perforation of the vertex should be made through a suture or fontanelle, while in face presentations, the perforator can be passed directly through the orbit. In extracting the after-coming head, the body is held up, and the perforator passed through the inferior maxilla up into the skull, or one may perforate through the occipital bone. The great danger in craniotomy is rupture of the uterus also. However, it is my belief that the careful use of the cephalotribe is attended by less danger than a protracted forceps operation or a difficult version. In closing, let me make a strong appeal for more frequent use of the cephalotribe when the child is dead, and where the forceps operation fails in extracting the child.

INFANT FEEDING.

BY J. T. MARTIN, M. D.

The occasion for at least a portion of these remarks comes from the fact that many women do not nurse their offspring. Sometimes this may be from choice; sometimes it is not their own fault; but whatever the reason may be the child must be fed, and the number that must use artificial food is increasing each year, so that the problem of infant feeding is one that the pediatricist has to meet at all times.

This is not only true in this country, but it is true all over the world, as the great demand for infant food will testify.

In the chemical laboratory, food has been manufactured that resembles the chemical constituents of the mother's milk so closely that were it not for the clinical tests that have proven the food almost valueless it would be a great triumph for science.

The number of foods exploited upon the market seem to be increasing every year, and the difference in the opinions of various physicians as to what should be the constituent elements of an infant food are so varied that, without some previous experience or instruction, you would likely be at a loss as to what would be the best food under certain conditions.

Cereal foods, or foods containing some portion of a grain, are more abundant than others. Of such foods the starchy portions are the most difficult to digest. To avoid this the starch must be dextrinized to a great extent—that is, heated to about 320° F., which changes the starch into dextrin, and renders it more digestible. In the absence of dextrinized starch, Dr. W. H. Davis called my attention to the fact that “*taka diatase*” will assist very materially in digesting the starchy portion of the cereal food.

Albuminized foods are very useful under certain conditions, but are not to be depended upon for a continuous diet. Undoubtedly the best and most satisfactory foods exploited upon the market are those cereal foods containing a certain per cent of egg albumen, and the right amount of sugar of milk. These seem to come nearest to meeting the natural requirements of the infant during its early history.

Lacto-Preparata and other predigested foods are useful under

certain conditions of stomach derangement, and at certain times can be used to tide over acute attacks of gastritis or other disorders where digestion is at fault but are not to be depended upon for a continuous diet. Neither predigested foods nor peptonized foods, though, will furnish the normal natural stimulus necessary for healthy digestion.

I believe that where the foods are properly manufactured and under proper conditions, they may be useful when given according to the directions that are pointed out for their usefulness, but, when you have examined them all, and have had clinical experience in their uses, you will come to the conclusion that some modification of cow's milk is the best all-around food for all classes of babies, for it comes nearer fulfilling the requirements of the infant than any manufactured food.

Holt, quoted by Judson and Geddings, gives the following principles as a basis of all methods for the scientific feeding of infants:

"1st. Mother's milk is not only the best, it is the only ideal infant food.

"2d. Any substitute should furnish the same constituents, namely, fat, sugar, proteids, salt, and water. Furthermore, they should be in about the same proportions as they exist in woman's milk.

"3d. As nearly as possible the different constituents should resemble those of mother's milk, both in their chemical composition, and in their behavior to the digestive fluids.

"4th. These conditions are fulfilled only in the fresh milk of some other animal."

Before considering fresh cow's milk I want to call your attention to the use of condensed milk in the feeding of babies. With it, I have had more and better success than with all other prepared, canned foods combined. Usually you will find a baby during the first three months of its life, able to live and thrive upon condensed milk, and many children will need nothing else until they are able to begin a mixed diet. The "Eagle Brand" of condensed milk has always proven by far the most satisfactory to me. A great deal, however, depends upon the preparation of even condensed milk. For a newborn infant, one part of condensed milk should be mixed with 16 parts of hot, previously sterilized water, and one part of milk

to 12 or 14 parts of water may be used for an infant two to four weeks old. Should there be any food left in the bottle, even for a few minutes after the baby is through nursing, it should be immediately thrown away and the bottle cleansed. Condensed milk deteriorates very rapidly after it is mixed with water, and returning the bottle to the baby, even when the food has stood for only half an hour, may do such damage to the child as will take weeks of careful feeding to remedy.

In considering fresh cow's milk a great many things must be taken into consideration. First, the food that the cow receives should always be fresh hay, good grass without weeds, clean ground meal or vegetables. She must have nothing but the purest water to drink; should be kept in a clean, airy stable; and should herself be kept clean. Before milking, the dirt and filth should be removed from the cow, the udder should be washed, and the hands of the attendant should be clean. In fact, everything about the dairy should be as clean and as aseptic as possible. The milk should be cooled in an open can, as soon as it is taken from the cow, and kept cool until it reaches the consumer.

Cow's milk contains a larger proportion of casein than human milk. The casein in the human milk coagulates into small, soft coagula, and is rapidly acted upon and penetrated by the gastro-intestinal juices. In cow's milk the coagula are large, hard, and rather tough, and are not easily penetrated by the gastric juice, making it necessary, therefore, to dilute the milk with water, so that the coagula will become smaller, less in number, and more easily acted upon. In the early days of the infant's life it will only be able to take a preparation of milk containing 1-3 to 1-2 of 1 per cent. of casein. This may be gradually increased to 1 1-2 per cent. by the time the child is nine months old, when it will be able to take whole milk.

The fat in the cow's milk bears about the same relation to the digestibility of the fat in the mother's milk as the casein. The new baby will take milk containing about 1 per cent. of fat, which may be increased in a few weeks to 2 or 3 per cent. and later on to 4 per cent. The infant seems to learn to digest fats easier than it does to digest casein.

So far as sugar in the milk is concerned, it is seldom necessary to reduce the percentage below 5, or exceed 7 per cent. If good sugar of milk cannot be obtained, cane sugar may be

substituted, but little more than half the quantity is needed as compared with sugar of milk, on account of its greater sweetness and greater liability to fermentation in the stomach. In some exceptional cases, cane sugar may be better borne than lactose.

I am often asked if it wouldn't be better to feed the baby on milk from a single cow. To answer this question properly it would require knowledge of the constituents of the milk of the individual cow from which it is expected to feed the baby.

If the cow is one that gives about the average milk, and is cared for according to the directions given heretofore, the milk will in all probability suffice, but my experience has been that the milk coming from a number of cows will furnish a better average milk than can be had from any single cow; so unless you know the animal is properly cared for, and is not fed from the refuse and slops from the kitchen you had better use the ordinary dairy milk, providing, of course, that it is a sanitary dairy.

In some of the larger cities laboratories have been established where you can obtain any desired modification of the milk, so that you can prescribe a less percentage of casein, or an increased percentage of fat, or make any change that the necessity of the child may demand.

Of the dilutants plain sterile water in the majority of cases will be all that is necessary. Other dilutants are barley water, oatmeal water, rice water, and whey.

Barley water is especially useful in case the child shall have diarrhea, or if the child should need a little more starch in its food. The amount may be increased or decreased as the exigencies of the case demand. It is made by cooking pearl barley in plenty of water for a long time, then straining it, and using it in place of the sterile water as a dilutant.

Oatmeal water is prepared in the same way, namely, cooking for two or three hours and straining. The oatmeal water is especially useful if the child should be constipated, as many babies are when raised on the bottle.

Rice water can be used whenever more starch is required than either of the other grains will supply.

To obtain whey, heat a quantity of good sweet milk with a little rennin until the curd separates, when the whey can be drawn off for use. The albumin in the whey is very easily

digested, and it furnishes a very excellent dilutant, when it is desirable that the child should have more albumin added to its food.

In cases of cholera infantum, or when the child is troubled with the diarrhea that usually attends this disorder, absolutely no milk or milk preparation should be used. Some food should be selected that contains neither milk nor sugar of milk, and then persisted in until the stools become natural.

After you have selected the food and taken every precaution as to how it should be prepared, if you fail in the care of the bottle your efforts will be a failure. To begin with, the *new* bottle should be first sterilized by boiling, and the nipple should be treated in the same way. After the baby is through nursing, the bottle should be soaked in a mild solution of bicarbonate of soda, with the nipple, and left there for some time, or until it is again required for use; then it should be scalded and thoroughly cleansed. A bottle with a round bottom, or one that has no corners should be selected, because it is more easily cleansed.

There has been a great deal of discussion regarding the desirability of sterilized milk as an infant food. The heat necessarily required to sterilize milk will cause not only a chemical change to take place in the calcium salts, and a coagulation of the casein, but it will also change the taste of the milk as well, so that it will be very difficult to get the child to take it, unless it has been accustomed to it from the first. It is one of the foods that a very young infant often refuses to live on.

The amount of heat necessary to destroy or render innocuous pathogenic bacteria, such as the germs from diphtheria, scarlet fever, or kindred diseases, ranges from 145° to 158° F. This does not change the taste of the milk, nor does it alter its chemical composition.

Should it be desirable to destroy the lactic-acid-producing bacteria, it will be necessary to push the heating to 167° for a space of 20 or 30 minutes. At this point chemical changes will begin to take place, and any further heat will cause a difference in the taste of the milk. But for all practical purposes this is sufficient heat to keep the milk pure and sweet for a reasonable length of time.

After the heat has been applied, the milk should be placed in

a receptacle, where a temperature of 35° to 45° F. can be maintained as long as it is necessary to keep the milk. If it were possible to pasteurize all milk before it leaves the dairy, then cool it to 35° F. and keep it at that temperature until it is needed for use, it would not be so apt to deteriorate or become sour.

In treating infants that are subject to bowel complaint during teething, or at other times, should the stool contain white, undigested coagula, the percentage of casein should be reduced. Should the diarrhetic stools not contain any coagula, but instead be somewhat excoriating, in all probability the percentage of fat is too great, and should be reduced, or it may be sufficient, instead of reducing the percentage of fat, to dilute the milk with one part of lime water to 20 parts of milk, to neutralize the acidity of the milk.

In preparing food at the home, you will find it best under most circumstances to obtain an Arnold sterilizer (a Pasteurizer is not always to be had). This can be so modified as to answer the purpose of pasteurizing the milk, by making a hole in the lid through which the pasteurizing thermometer can be inserted, into the neck of one of the bottles. These sterilizers usually contain six or seven bottles, so arranged in a frame that they may be lifted from the sterilizer whenever desirable. When you are ready to pasteurize the milk these bottles should be filled with milk diluted to the proper proportions, with addition of either lime water or soda, or any other chemical, and corked with sterile non-absorbent cotton, or in the absence of the non-absorbent cotton, absorbent cotton may be used. They should be placed in the water bath, and heated to 165° or 167°, and kept at that temperature for some 20 minutes, and then placed in a refrigerator where they can be cooled to 35° or 40° F. They should be left corked with the absorbent cotton until you are ready to use them.

This preparation of the food will cause it to keep all right from 12 to 24 hours (12 hours in the summer time and 24 hours in the winter).

The quality of the dilutant that a baby will require varies considerably in different cases. One child may thrive on 1 part milk with 4 parts water, while another child will be able to take 1 part milk and 3 parts water. Still another, possibly

an exceptional case, will be able to take equal parts of milk and water, during the first weeks of its existence.

This preparation of milk and water should be sweetened either with the natural sugar of milk, or, when that is not possible, with cane sugar, while a little pinch of salt should be added, and if necessary a grain of bicarbonate of soda to the ounce of the solution may be used—that is, if lime water is not sufficient to neutralize the acidity.

The quantity of food that a baby should receive at each feeding varies so greatly with different babies that no hard and fast rules can be laid down regarding the matter. Some babies will take only two ounces, while others may take three or four ounces at a single feeding, without doing violence to their digestion. Should the baby take a little too much at one feeding, it is often thrown up without the least harm to the child. You may say in general terms that a baby's hunger should be satisfied. If two ounces is not sufficient, give it three or four, if necessary.

A new baby that is fed right should sleep about 20 hours out of the 24. Should the baby wake and fret for some little time before the hour of feeding has arrived, you may be quite sure that it has not had enough to eat at the last feeding, and hence the amount of food should be increased. The average time for feeding a new baby is usually given at about two hours. This would make 12 feedings in the 24 hours, a very hard rule to closely follow, since the baby will sometimes sleep four to six hours at a time, and under no circumstances should a good, healthy baby be awakened to be fed. Hence the rule about the regular time and the quantity of the food that the baby should take ought to be somewhat elastic.

In portions of California, no matter how carefully the dairy may be kept, or how much the cow's food may be looked after, as regards the quality, in most cases, and under most circumstances, alfalfa clover constitutes a large portion of the cow's food.

Milk that comes from a cow that is fed on alfalfa clover contains an unusual amount of lactic-acid-producing bacteria. The lactic-acid bacteria are scarcely ever destroyed with a less degree of heat than 167° F. Should you feed a child on milk from clover-fed cows, especially from cows fed on green

clover in the spring of the year, the milk will often be vomited in hard, ropy curds, or, in case it is not vomited, it will act as a foreign substance in the child's alimentary canal, and cause very serious reflex disturbances, if not convulsions, so that you will almost always find it necessary, whatever precaution you have been taking in the production of the milk, to pasteurize the milk from clover-fed cows. If you are entirely out of the clover districts, where the cow has nothing but Bermuda grass, fox-tail, or fresh grain hay, pasteurization of the milk may not be necessary.

Should you practice in the country where the dairy is close to town, you will very likely have less trouble with the milk than you would have were you in practice in a large city, where the milk must be hauled a great many miles before it reaches its destination. One of the most disastrous sicknesses that a bottle baby is liable to is caused by mixing the night's and morning's milk, which is occasionally done in the dairies, for the supposed purpose of keeping the evening's fresh milk until both evening and morning milks shall be delivered to their customers at the same time. If the milk has to undergo a long haul to reach the larger cities, it should be pasteurized, cooled, and properly cared for during transit, when it would be a good deal better for feeding babies than it is by the present management.

An experience I at one time had at the Foundling Home illustrates very nicely the necessity of carefulness in the care of the milk.

For a long time the Home had been receiving milk from one dairyman, who had been instructed exactly how to handle the milk from the time it left the dairy until it reached the Home. Upon reaching the Home the covers were removed from the cans, and they were placed in the refrigerator and cooled to 40° F., after which the milk was taken out and pasteurized for the use of the children and babies. Some little time ago this dairy changed hands, and within a few days every child that partook of the milk was made sick. Some of them were very ill, and we were at a loss to understand the cause for some little time. The milk man had been instructed how to handle the milk, how to place it and where, but the day before the children were taken sick, while he had placed the cans in the refrigerator, as was the custom, he had neglected to remove

the covers from the cans; so the milk was cooled while the animal heat remained in it, and as a consequence the babies were all in trouble.

Up to nine months of age it is very seldom that anything other than milk or some modification of milk can be used to feed the baby. After the infant has passed the age of nine months, other foods may be thought of, especially for vigorous, healthy babies. Others will have to wait until they are a year, or even a year and a half old, before beginning a mixed diet. The old-fashioned dish of bread and milk will be a very good beginning. Then a little mashed potatoes may be given—milk toast, beef broth, milk gravy, and even a little baked apple may be allowed during the second year of its existence.

When a child is over a year of age, it is very seldom that a physician is consulted about its diet, and then only when something has gone wrong, and because the parents do not understand what is the trouble with the child; so when you express the opinion that the sickness is the result of some dietetic irregularity, you will be informed that the child has eaten nothing but what it has always been accustomed to eat, and it never had any such trouble before. In case you should not be able to demonstrate your theory by showing some undigested food that has passed the bowels, your wisdom may be brought into question. Let me say right here, that though some children may eat them without apparent harm, there are certain things that no child should ever be allowed to eat until it is strong enough to withstand the reflex, nervous irritation caused by undigested food. This may be at three years of age or it may not be until the child has reached the age of six or seven. It is sometimes easier to say what a child should not eat, than to name all the things that might be permissible.

Uncooked apples, unless thoroughly masticated, cooked or uncooked potatoes, turnips or onions, unless thoroughly mashed, all fruits containing small seeds, such as grapes, blackberries, raspberries, or currants, nuts of all kinds, especially peanuts, green corn, are some of the most indigestible foods that a child can eat. In fact, a child should never be permitted to take anything into the stomach that cannot readily be penetrated by the gastro-intestinal juices, because children, as a rule, do not masticate their food properly.

Should the parents of the child be unwise enough to disregard this advice, you will be liable to have an emergency call to attend a child in convulsions. Should this be the case, you may either make or mar your reputation by the manner in which you deal with such an emergency. Let me suppose that you have been called to see a child in convulsions, caused by something it has eaten. You will find that all the women in the neighborhood have preceded you to the house—that they have stripped the child to the skin and have it immersed in a tub of hot mustard water, and are wondering why the convulsions do not stop. In order to get things moving, you had better send one woman after a fountain syringe, another after some hot water, and a third after most anything else you may or may not need, but whatever you do, get the women to doing something. Have the woman that is most officious hold the child. She should place one of her feet on a hassock, while the other should rest upon the floor. The child should be placed on her lap, with its buttocks on the knee that is highest, while the head and shoulders should rest on the other knee. This will leave the child's hips much higher than its head. The assistant takes hold of both of the child's feet and holds them out of the way; so you are ready to proceed. Hang the fountain syringe high, so you will have a good, strong flow of water. (I speak of fountain syringes because I have found them handy). After inserting the nozzle, in order to protect yourself, you should place a small cloth around it, so that when the return flow of water begins you will be able to protect yourself from a wetting. Keep the water going until the return flow has brought away the offending matter, or until the convulsion is relieved. It makes no difference how much water you may use, whether it is one bagful or several, you cannot hurt the child and the continuous flow of water keeps up the peristaltic action of the bowels, which is needed to move along the undigested food. Should you not be satisfied with the result, and there seems to be still some tendency to spasms, you will have to repeat the process, and if this does not suffice, give a good tablespoonful of castor oil.

The mechanical irritation must be moved on before the child is safe from a possible return of the convulsion. Most all the cases of convulsions you will be called upon to treat will be

directly the result of some dietetic irregularity, although in many cases, they may be attributed to teething. But teething is a perfectly physiological process, and when the child is properly fed there should be no convulsions from that cause.

In twenty years of practice I have seen but one case of convulsions due directly to teething. In this case the gums were hard and leathery, and the child was afterwards subject to epilepsy, showing that there was a constitutional predisposition to spasms.

Several years ago I was called to see a child threatened with convulsions. Upon arrival I found the child in a partial convulsion from eating green corn. The mother assured me that she had only eaten about a tablespoonful, and hence not enough to cause the trouble. However, after using an enema, to the mother's great surprise, a teacupful of undigested corn was brought away, and the child recovered without further trouble.

Last winter I was called up about midnight to see a child, aged four years, in convulsions. On applying the water treatment, as directed above, the only undigested material brought away was a few ripe olives that the child had eaten the day before. These were pickled olives and were properly cured. Olives were prohibited and the child remains in good health. It is worthy of note in this case that the child had been accustomed to eating olives occasionally for a year or more, and had had no trouble until this time.

As a rule, most of these cases will recover without any bad results, and have no return of the trouble, if due attention is given to the diet. Hence, you can usually assure the parent that the child will come out all right, but nevertheless, I have had experience with some notable exceptions to the rule.

About twenty years ago I waited on a child in convulsions, who seemed to rally from the spasm as well as could be expected, but on the following day I noticed that his right leg was paralyzed. He has now grown to manhood but that leg is still useless.

Last spring one of my patients was taken with convulsions, caused by eating an apple. It recovered from the convulsions in a short time, but its right leg is paralyzed as a result.

Several years ago a boy about four years old was brought to me from Blue Canyon to be treated for indigestion. I gave the medicine that seemed best, and the child made good

progress towards recovery, so that the mother returned home with him. In the course of two weeks I learned that the child was dead and this was the cause: He ate a quantity of peanuts and was taken in convulsions shortly afterwards. A physician was called in who diagnosed it cerebro-spinal meningitis. Another physician was called in consultation, and diagnosed reflex convulsions induced by something that had been eaten.

The mother had given a party to her neighbors the day before the child was taken sick, and several of the neighbors told me that the child spent most of the evening by the peanut dish eating peanuts, and in two days he was dead. Notwithstanding the diagnosis of the attending physician, there is not the slightest doubt but that undigested peanuts were the direct cause of the child's death.

Children from one to two years of age are fed whole milk, milk and bread, with beef or mutton broth, and a little flaked rice two or three times a week, to vary the diet as their appetite seems to require. The number of children in the Home varies from 60 to 65. Of these 20 to 25 are under two years of age. In five years we have never had but two children in convulsions caused by something they had eaten. These children were teething, and while I am well aware that they were much more liable to convulsions during this time, the convulsions were caused by the improper cooling of the milk, spoken of before, and so I have always found that the dietetic irregularity is the exciting cause of the trouble.

From the fact that the child has been eating a certain article of food for an indefinite length of time, without apparent harm, it does not necessarily follow that this kind of food is good for a continuous diet. I have very often found that when an article of food is injurious to one child it will in time work harm to other and stronger children, if persisted in.

The foundation of many cases of dyspepsia, in after life, is often laid during the first two or three years of the child's existence by injudicious feeding. Once a child has had a convulsion from undigested food, another is more easily produced from the same cause, and the tendency to gastric disturbances is greatly increased and the resisting power of the child is lessened every time.

So far as the kind of food that is required for an infant under nine months of age is concerned, my experience coincides with the foregoing principles enunciated by Holt, as quoted from Judson and Geddings, for the scientific feeding of infants, and it is with the utmost confidence that I say to you that the modification of fresh milk of some animal, preferably the cow, will be found not only the best, but the only food needed in the great majority of cases. Those exceptional cases where milk is not well borne must be treated according to their immediate needs.

From the several instances that I have already related of the results of injudicious feeding, both with their immediate and remote consequences, it is evident that as much, and in some cases even more care should be taken to have the child's food right, after it is able to take a mixed diet, than was taken to have the food right, when the child first began its independent existence. A great many, and I might say that most parents do not know how or what a child should be fed, once it begins to clamor for something other than the food it has been accustomed to, during the nursing period. The mother in all probability has learned by hard experience of sleepless nights with a colicky baby that it is necessary to have the food exactly right during this time, before either she herself or her child can get a fairly good night's rest, but she has yet to learn that the food should be selected with equally as great care as it was before it began the mixed diet. If parents were taught how to feed their children and what kind of food would be the best adapted to their needs, there would be much less sickness in early childhood. Even if the parents had this knowledge, and were watchful of their children's eating, the child would not know that it would be best to chew the food properly unless it were taught to do so.

It is all well enough to assume that a child will learn by instinct what food is best for it, and also how to masticate the same, but the parents should see to it that the child's instincts are directed to the food that is easily digested, and that it is taught to eat properly, before it is allowed to select any kind of food that needs mastication. In this way a great deal of illness among children may be avoided, and many of the perils of early childhood very much lessened.

Current Comment.

J. Blumfeld, M. D.:

We must recognize the fact that an anesthetic as convenient and as efficient as *ethyl chloride* will certainly find wide employment, and that it is, therefore, of more practical value to try and lay down the rules which should guide its use than to decry its employment altogether.

Although in large cities, where no considerations of mere portability or of time-saving may interfere with the attempt to realize always the most perfect conditions of induction and continuance of anesthesia, ethyl chloride will probably play only a small part, yet the case is far otherwise in other places.

Just as anesthetists have with increased experience and experimental work come more and more to regard fatalities under chloroform as due in the majority of instances to use of too strong a dose, so, too, with ethyl chloride, overdosage appears more likely in any fresh fatal case recorded to be the true explanation of the result.

I am convinced that many who use ethyl chloride habitually give too large doses, and do not realize with what extremely small amounts the required anesthesia can be obtained. Personally I find that, generally speaking, 2 c.cm. for children, 3c.cm. for women, and 4 c.cm. for men are the maximum doses to be used, whether for short operations or when ethyl chloride is used before ether. I do not use ethyl chloride at all for prolonged operations, nor do I believe that it should ever be followed directly by chloroform. This dosage has to be combined, of course, with the strictest limitation of air supply, but such limitation is essential to success with ethyl chloride, as was plainly proved by Dr. Hewitt's experiments, in which, starting with liberal air percentages, he showed that even fair results were not attained till the method of "rebreathing" a concentrated vapor was reached.

Exactly in what way an overdose of ethyl chloride produces its fatal result does not seem at present at all clear, though clinically it appears that the deaths resemble that from primary heart failure rather than asphyxia. The only experimental work, however, bearing on the subject with which I am ac-

quainted showed that death was attained with ethyl chloride through respiratory paralysis, the heart's action and the blood pressure being well maintained. The way in which bleeding occurs under ethyl chloride, the remarkable absence of cyanosis with exclusion of air, the protracted headache and prolonged sickness that sometimes follow, seems to suggest that a blood change may really be the explanation. However that may be, I believe that if ethylchloride were used only—(1) with strict attention to dose, (2) alone or as a preliminary to ether, (3) with small prop between the teeth, (4) from simple "bag and fece-piece," with no intervening lint or sponge, there would be less frequent occasion to deplore its employment.

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George R. Southwick, M. D.:

The symptoms of *retroversion of the uterus* are more pronounced when the patient is erect than when she is recumbent, for the simple reason that the displaced structures are subject to various factors in the erect position which tend to perpetuate if not to increase the displacement. The treatment which gives the most benefit is that which restores and maintains the uterus in a normal position when the patient is erect. This position is variable within certain limits. If the bladder is empty the axis of the uterine cavity is nearly parallel with the horizon and the anterior surface, i. e., the inferior surface of the body of the uterus rests lengthwise, as it were, on a bed of tissues composed of the bladder, the vesico-vaginal septum, the anterior and posterior walls of the vagina, the levator ani muscle and its fascia with numerous bands holding these various layers in position and in contact. The uterus rests in a sling formed by the broad ligaments. The round ligaments assist the broad in swinging the corpus and like guy ropes keep the fundus forward, so that all the abdominal pressure falls on the back or superior surface of the uterus. This is a most important function, for as long as the uterus is supported from below and maintained in anteversion by the round ligaments, a posterior displacement seldom occurs except as the utero-sacral ligaments allow the cervix to slide forward. The utero-sacral ligaments are only folds of peritoneum and are not always easily demonstrated. The writer has investigated their condition while performing abdominal sections and has found in some cases that yielding of the utero-sacral ligaments really means that a

very considerable portion of the peritoneum of the pelvic floor is quite loose from its nearest attachments and allows all the pelvic contents to slide down toward the pelvic outlet, a condition comparable to enteroptosis, and one in which any attempt at shortening the utero-sacral ligaments would be quite out of place, as the loose peritoneum seemed to have no special fixed position.

Some emphasis has been laid on the increased anteversion of the uterus in the erect position, as compared with the recumbent position used for bimanual examination. The abdominal pressure on the uterus from above, the support of the uterus beneath by the pelvic fascia and a proper tension of the round ligaments are important factors which maintain the uterus in position. All these factors are to be considered in the treatment of displacements. In most cases there is an injury of the supporting fascia of greater or less severity. If the injury is slight an increase of abdominal pressure, such as constipation, a relaxed abdominal wall or a laborious occupation will displace the uterus. Such cases are not uncommon in the dispensary clinics as well as in private practice. Many of them can be treated with good results by curing the constipation, supporting the abdominal wall, and local treatment to keep the uterus in position and to relieve the pelvic congestion which is often present. Such remedies as *sepia*, *belladonna*, *arctium lappa*, and *American ash* are well worthy of a careful trial. It is not to be expected that such remedies will replace the uterus, but the benefit obtained from them has been observed too often to admit of reasonable doubt of their usefulness.

It is the fashion to decry pessaries, but the writer would be sorry to entirely abandon the use of them. They often serve a useful purpose in suitable cases, especially when pregnancy is liable to occur. Pregnancy cures some cases, if the supporting pelvic fascia is not too seriously damaged and if care is taken to make the uterus undergo involution in a position of anteflexion. In some of these cases a pessary is invaluable. Many cases of displacement originate in the puerperal period. The patient lies too long and too much on her back with a tight binder and distended bladder and the uterus sinks in the pelvis as a consequence. Constipation aggravates such a condition, and if the attending physician fails to make a thorough pelvic examination or to find the displacement the latter be-

comes chronic. The writer makes an earnest plea for the thorough examination of puerperal cases, the frequent passing of urine, the early sitting up for the purpose, the reclining on the side a part of the time, and the discarding of a very tight abdominal binder after the third day.

There remains for consideration a large group of cases differing from the above in the fact that there has been a serious injury to the fascia and the cases are of long standing. Even in these, great benefit can be given by a carefully fitted abdominal supporter to remove a part of the abdominal pressure, by electricity and other methods of treatment mentioned above. It is in these cases, however, that we turn to surgery for aid. Defects of fascia must be repaired and as a rule supplemented by some operation which will keep the uterus anteverted.

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R. S. Snyder, M. D.:

I believe that a *vaginal examination* is advisable in all cases as a part of the preliminary examination in women pregnant for the first time, and in others whose obstetrical history leads to a suspicion of pelvic deformity it is imperative. For my own part I think that we should depend almost entirely upon abdominal examinations for our diagnosis. The obstetrician must make one vaginal examination to guard against such an accident as a prolapsed cord or limb, and at the same time to secure confirmatory evidence of the correctness of his diagnosis by external palpation. By it can be determined:

1. The size and condition of the vulva and perineum. If you are examining a primipara try to estimate the probability of having a tear, and the amount of time it will require to prevent it. In multiparæ notice whether you have a relaxed outlet, or perhaps the presence of scar tissue indicating old tears. Perhaps you may chance to notice muconium upon your examining finger, or it may be noticed upon the aseptic pads covering the vulva. As a rule when we see muconium in the discharge we at once conclude that we have a breech, but this is not always the case. We may get muconium in vertex presentations, but it is always a sign for rapid delivery, as there must be some undue pressure upon the fetus.

2. As your hand enters the vagina you can estimate the size and condition of it, also the presence of a prolapsed cord or

limb if such a condition should happen to exist in the case under examination.

3. Now hunt with your examining finger for the cervix. If it is readily found you can, as a rule, assume that you have a normal position, but if the cervix is placed far back in the vagina so that it is hard to find with the examining finger, beware, as you will often meet this condition in malpositions of the fetus, especially occipito-posterior positions. Having found your cervix, notice the amount of dilatation that exists, and whether the cervix itself is soft and dilatable, or hard and rigid. At the same time run your finger around the edge to see if there are any old tears in it. Another point to be noticed is the presence of placenta previa, either marginal, partial, or complete. Again be prepared for trouble when the head begins to descend through the canal and pushes the undilated cervix before it.

4. If the cervix is dilated, notice the condition of the membranes. Does the probable stage of the labor, the amount of dilatation of the cervix, and pouching of the membranes seem to correspond, or does there seem to be something irregular about them? In a primipara, in a breech case, or, in fact, in any malposition, the presenting part will not fit accurately into the cervix. This allows the whole force of the uterine contraction to come upon the liquor amnii, and it, of course, tries to escape at the point of least resistance, which is the cervix. If the one is rigid you will notice that the membranes will protrude like the finger of a glove, and they will break early, but if the case is a multipara the cervix dilates easily, and you may find a large, wide pouch of membranes, which sometimes descends to the external os before it breaks. In any case, if you have the waters coming away with a rush in the early part of labor, suspect a breech or a malposition of the fetus.

5. Having ascertained the condition of the cervix and the membranes we have yet to determine which pole of the fetus is occupying the cervix, the amount of advance that it has made, and if there is sufficient room for it to pass through the bony pelvis. If the presenting part is not fixed, we endeavor to touch the promontory of the sacrum with our middle finger, while the base of the thumb is pressed against the subpubic ligament. If we cannot touch the promontory of the sacrum, we are pretty sure that we have plenty of room. If we can

touch it, we mark the position of the subpubic ligament upon our first finger, and then measure the distance between this point and the end of the second finger. A measurement of four inches indicates a dangerously contracted pelvis, while three and one-half inches is generally taken to be too small for delivery of a live child per vaginam.

6. As to the nature of the presenting part and its fixity this should be determined by external examination; however, vaginal examination sometimes gives valuable aid. The first circumstance to excite suspicion on examination, even with the os undilated, is the absence of a hard, globular mass felt through the lower segment of the uterus, so characteristic of the head. Personally, I never bother with the fontanelles and sutures, except to note their presence and that marked separation of the head bones indicates hydrocephalic head, as they are so often unreliable. In a breech case you get a much softer presenting part, offering three points of bony resistance formed by the tuberosities of the ischium and the tip of the coccyx. Its surface markings are the aperture of the anus and the external genitals. It must be diagnosed from a face presentation, but here you have the characteristic aperture of the mouth with its bony ridges for the teeth, and the fact that the anus does bite or grip your finger (Dr. Adam Wright). Lastly, in cases of doubt, where the cervix is well dilated, you can make sure of your diagnosis by introducing your hand into the cervix and feeling for an ear, etc. Be careful that the ear is not doubled upon itself.

♦ ♦

Walter L. Monro, M. D.:

In cases early seen of *hypertrophied prostate* where the symptoms are mild or absent, catheterization is easy, and there is no residual urine, it may be allowable to temporize, but it is precisely in this class of cases that operation gives the most brilliant results with the least risk, and it should be resorted to on the first indication of increasing trouble.

Medication is of little value. Belladonna, hyoscyamus, and urinary antiseptics may accomplish something and should certainly be used in the early stages as adjuvants.

Dilatation of the urethra and the relief of possible strictures by the passage of full-sized sounds at frequent intervals may keep the urethra open and postpone the impending breakdown,

but it is doubtful, to say the least, whether they exert any influence, as was once thought, to produce atrophy in the parts immediately about the urethra. Still they have a place, though a small one, in the treatment.

The catheter, if used continuously at all, should be resorted to on the first appearance of an appreciable quantity of residual urine. How far and in what subjects it should be used is a difficult and important question.

If the patient is intelligent, well-to-do, and so situated that he can be always under the care of a competent physician, the catheter may render life comparatively easy and postpone for a long time or altogether the necessity for surgical intervention. Its use calls for unremitting watchfulness and attention to strict asepsis. In elderly, feeble patients in whom prostatic disease has developed late in life, it may serve to the end. In the unintelligent, poorer class of patients, unable to avail themselves constantly of professional advice, it becomes an added source of danger and tends to aggravate rather than mitigate the symptoms. Exceptionally its use has been continued for many years, that particular urethra seeming to have an unusual tolerance of germs and immunity from infection.

In early cases in which catheter life has not begun, occasional attacks of acute retention may occur, through too long retention, intemperance, and other causes, and may furnish the first warning of impending trouble. Catheterization under these circumstances calls for the greatest skill and care. A soft instrument is preferable, if it can be introduced, and no other should ever be trusted to inexperienced hands; but if its introduction proves difficult or impossible, the skilled operator prefers a silver instrument with a long prostatic curve and a second curve in the shaft. In certain cases, evidently those with enlargements of the lateral lobes pressing on the urethra, the flat prostatic catheters introduced two or three years ago are frequently useful.

Force should never be used, lest to the existing condition we add traumatism of the urethra or puncture of the prostate, with greatly increased danger of sepsis.

If the bladder cannot be entered without force, it is far better to employ suprapubic puncture with the aspirator and follow this by palliative treatment, when voluntary micturition usually again becomes possible.

In the majority of those who have entered upon catheter life a "breakdown" comes sooner or later, when increasing pain and tenderness, frequent hemorrhages, constant desire to empty the bladder, with the exhaustion consequent upon sepsis and loss of sleep, render life no longer tolerable.

Usually under these conditions the kidneys are already compromised by the backing up of the urine and the extension of sepsis. Generally by this time the patient is reduced to a condition which precludes other operation than one of imperative necessity. Formerly no adequate aid could be offered these unfortunates, and they were to be congratulated if the end came quickly.

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B. Van Sweringer, M. D.:

The writer recently saw a case of *miscarriage without pain*. There was no complaint upon the part of the young girl of the typical pain produced by the uterine contractions.

The first symptom which appeared was headache. Following the onset of this symptom came a chill which lasted for an hour. Then the temperature arose to 102 3-5° F. As the fever increased the cephalalgia became more pronounced and the writer was sent for. Examination of the chest was negative, as was also that of the abdomen, and nothing could be found to explain the occurrence of the chill.

At the visit next day it was learned that the patient had been married seven months before, that her menstruation had been regular and that she was then menstruating as usual. The occurrence of another chill, even more severe than the preceding one, led to a repetition of the examination of the day previous, with the same result as far as the chest and abdomen were concerned, but vaginal examination showed a fetus, nearly four months advanced, about to escape from the cervix. She still persisted in the statement that she had had no pain in the lower abdomen or pelvis. She was taken to the hospital, where the placenta was removed and the uterus packed with sterile gauze to control a very profuse hemorrhage which followed. She made no complaint of the pain which is often produced by the contractions excited by the uterine pack. If sepsis had not supervened in this case to attract attention, the first thing to give any warning of the state of affairs would have been the passage of the fetus.

The writer has knowledge of one other such case which occurred at the eighth month of uterogestation, the delivery being accomplished without any evidence of suffering on the part of the mother.

♦ ♦

S. S. Graber, M. D.:

- The *local treatment of women* has the peculiarity that any one, however unskilled in the necessary technique, may do more or less toward attempts at treatment without the patient knowing anything as to the results she should obtain.

The first necessary thing is the proper discrimination of the cases; those that are distinctly surgical from those that are suitable subjects for palliative treatment. Tumors, ectopic pregnancy, pus tubés, malignant diseases and extensive lacerations are certainly not subjects for the latter; but chronic, subacute, and even some acute forms of inflammation; displacements in any direction; some forms of endometritis, and diseases of the skin peculiar to this region are all amenable; and it is surprising at times how much benefit some will derive from it even to the extent of cures, so much so that one's pride sometimes becomes a little nettled at an adverse prognosis originally given.

While there is probably more glory in operating, let us be just to our women and do what we can for them to keep them from the operating table, at the same time not hazarding their chances of recovery by foolishly prolonging a condition that decidedly requires surgical intervention.

The necessity of a good drilling in diagnosis cannot be too strongly emphasized, and its importance in all gynecological work should be fully appreciated; for the greater the skill of one in determining the exact condition in the pelvis the greater will be the beneficent results of his treatment. On it depends largely the degree of success or failure. It is not necessarily the large things on which so much depends; we must be ever vigilant to observe the small ones, and be able to differentiate and recognize the little affections that may exist.

How often do we find women undergoing all sorts of treatment without success on account of failure to notice an almost imperceptible little fissure in rectum or perineum; a little ulcer here or there; or perhaps a small neuroma, or even an obscure neuralgia in some part of the pelvis.

Also we must not only be able to recognize what structures, if any, are diseased but to what extent they are diseased and to what degree pathological. For instance, if we feel an ovary, determination to institute treatment must not be based on the mere fact of being able to feel it, but on the conclusion as to whether or not it is diseased. If a uterus is found somewhat enlarged, we must still further decide whether the increase in size is due to subinvolution, an intramural fibroid or even possible pregnancy. Again, a cervix may not seem extensively torn and yet cause more disturbance and require more urgent treatment than one that is. Hence, it is evident the careful mastering of the precise condition in the pelvis must be accomplished before positive lines of treatment can be decided on, or prognosis given. We must know whether a particular case is a subject for surgical interference only, or one for palliative work, and if the latter, what position may be most to her advantage, what form of douche or what kind of medication.

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J. C. O'Day, M. D.:

As it is the general practitioner who first comes in contact with cases of *extra-uterine pregnancy*, upon him the importance of an early diagnosis should be impressed. Let us remind the general practitioner that a history of sterility, extending over a long period of time, with normal menstrual function, the woman knowing of no reason why she is sterile, then the sudden cessation of the periods with the subsequent distress and pain in the pelvis, are strongly suspicious of ectopic gestation and warrant an exploratory incision. Gonorrhea is a disease that travels along the surface of the mucosa, and is one of the great causes of tubal pregnancy because it has destroyed the ciliated epithelium of the tube, resulting in a cicatricial stricture in place of the normal epithelial cells. Then, when the ovum comes down, it is hindered from passing through into the uterus, and there begins the trouble. Tortion of the tube and other mechanical causes are factors to be considered, but gonorrhea, to my mind, is the most prevalent cause. It has not been very long since I operated on what was thought to be an ovarian cyst in a woman probably forty-six years of age. As she was a neurotic, I was rather reluctant to operate because you cannot cure neurasthenics by anything. However, I found in the left tube a fetus and sac with placenta completely walled

in. This woman had been menstruating regularly, but back in her history was a period when she had not for three months. So we see that a pregnancy along any portion of the genital tract will suspend the menstrual function.

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C. P. Noble, M. D.:

There are points about the *diagnosis of extra-uterine pregnancy* that I would like to touch upon, particularly the atypical cases. No doubt, as a rule, pelvic pain is present, but not always. I have seen three cases in which pain was entirely absent from the pelvis and located in the epigastrium; so that it is not essential that there should be pelvic pain in order to make the diagnosis. It is also true that when a patient has lost a great deal of blood from rupture, usually you will have a subnormal temperature, but this is a rule not without exception. I have seen a case with free hemorrhage and shock, but with elevation of temperature. It is the rule rather than the exception in cases with hematocele, that, while the hematocele is being walled off, the temperature is above normal. The important point is that in case of free hemorrhage, it is quite possible to have an elevation of temperature.

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Julia C. Strawn, M. D.:

The subject of *retrodisplacements* has been so thoroughly handled in its etiological factors and so exhaustively treated surgically I feel we must have the local and adjuvant treatments given their share of consideration.

We note first, the increased size of the uterus frequently found due to embarrassed circulation and lack of good drainage at the menstrual period, hence we often find metritis and a chronic inflammation of the parenchyma and endometrium. The constant pressure of the fundus pushing down the Douglas pouch on the pelvic floor, causes it to adhere to the anterior surface of the rectum.

The external os becomes patulous and often inflamed. If children have been borne the cervix is flattened and lacerated. The ligaments are stretched, ovaries frequently misplaced and inflamed as are also the Fallopian tubes, and the ureters may be compressed.

Naturally and fortunately we do not find these conditions always present and seldom do we see all in one patient, for it is

unusual to find retrodisplacements with no pelvic symptoms whatever. In making physical examinations if I find such a misplacement with no definite symptoms I never tell the patient of its existence, for someone has said "a woman has two brains, one in her head and one in her pelvis," and if she is nervous and knows of the pelvic condition, will think that every ache or pain attributable to that. However when I am confident the patient's physical and mental welfare depends upon the proper care and treatment of this pathological state, I first try to remove the cause by reducing the inflammation not only of the uterus but the adnexa and pelvis, and reposit the offending organ if possible. If not possible I use some medication in the way of ichthyol, iodine, hydrastis, calendula, or magnesia sulphate. With all the above I use a generous quantity of glycerin or boro-glyceride for its hygroscopic effect on the inflammatory bands and tissues, using either strips of gauze, cotton, and wool, plain cotton, brace tampons depending upon the nature of the case as to which medication or mode of application of same. If a patient is confined to bed with pronounced cellulitis, I inject an ounce or two of above solution into vagina and enough cotton to hold in place.

As soon as possible I reposit the uterus by any of the following methods. Digital, bimanual, retro-abdominal, or by use of a repositor and sounds. I then place a brace tampon made entirely of tightly rolled cotton 2 or 2 1-2 inches long and about 3-4 inch in diameter with string tied around the center. This is inserted lengthwise in the vagina up to the cul-de-sac. Then I turn it crosswise behind the fundus having previously medicated or lubricated in some way—this keeps the repositated organ in place and does not irritate either the fundus or a prolapsed sensitive ovary. I also insist on the patient sleeping on the side or stomach and assuming the knee-chest position two or three times daily, from three to thirty minutes if possible. If she cannot come to the office oftener for treatment she is instructed to dilate the vagina while in the knee-chest position. The inflation of vagina with air will often reposit a movable retroverted uterus.

Massage is also a most valuable adjuvant if properly given, thus stimulating the circulation and strengthening the tissues and ligaments. I believe one authority states there are forty-five different mechanical devices for use in retrodisplacements,

some of which are good and many of which I have found from clinical and private experience useless. The pessary is most valuable if no inflammation exists, but must be carefully and perfectly fitted and watched daily for a short time and examined often (at least once a month) thereafter, to prevent producing more harm than good. Those we have found most useful are the Smith-Hodge, Albert Smith, Thomas, Mundi, and Hodge.



B. C. Harmon, M. D.:

Since the dawn of antiseptic surgery no more important or valuable discovery has ever been made in surgical therapeutics than the various uses of the so-called *normal salt solution*. Three centuries or more have passed since transfusion was first practiced, but the twentieth century was almost upon us before we fully realized the value of such an important resource in the treatment of hemorrhage, shock, sepsis, and toxemia.

The operation for transfusion is readily done in a hospital where the proper instruments are always to be obtained, but elsewhere many difficulties may arise. But it is possible to succeed with very few simple instruments if one has a suitable canula always ready with other instruments when about to perform an important operation, or even attend a case of labor. Every physician should carry in his pocket-case, or obstetrical bag, one or more canulæ ready for an emergency. With the necessary canula, one can generally be sure of obtaining the other articles. A clean fountain syringe with the accompanying tube may be easily obtained. A glass irrigation apparatus is a desirable addition to one's outfit, but the fountain syringe will answer. Nearly all the difficulty usually encountered in the operation would disappear if the operator, or better still, the assistant or anesthetizer, would anticipate the operation and tie a bandage around the patient's arm above the elbow to prevent collapse of the vein. The writer has found the operation easy enough save from this one omission. The largest vein at the flexure of the forearm should be selected; the median cephalic is preferred if large enough to be easily isolated. An incision is made an inch or more in length and the vein quickly exposed. A double ligature (of catgut preferably) is thrust under the vein with forceps or blunt needle, and cut so as to leave two equally long ends for tying. The lower or distal

ligature is tied tightly around the vein. If the vein is well filled with blood it is easy enough to catch a small fold with forceps, and with scalpel or scissors make a partial cross section. The canula is to be inserted while this flap is held in the forceps, and, as above stated, the insertion is easy enough, provided the vein has not become collapsed and almost or quite empty of blood. In the transfusions made by the writer, this has been the only real difficulty. It is a very difficult operation, to introduce a sharp aspirator needle in a collapsed vein without puncturing its walls, in which case the fluid will not enter, but will distend the cellular tissue around the vein. Therefore, if one is not provided with a blunt canula, care should be taken to blunt or dull the point of the ordinary aspirator needle as much as possible, as the introduction will thereby be greatly facilitated. The canula may be introduced one-half to one inch into the vein, and as soon as the point is known to be safely in position, the remaining piece of catgut is provisionally tied with a half knot around both vein and canula, which prevents escape of either blood or salt solution from the incision in the vein. If the same care is taken to prevent the introduction of air that is taken to give a hypodermic of morphia, or any other drug, no accident will occur.

But it is easy enough to let the solution flow gently during the introduction of the canula, as the wound will be kept free from blood, and in this way the operation is, if anything, easier. Most authors suggest a temperature of 99° to 100° F. But such prompt results have been obtained from the use of a higher temperature that it is at least a plausible suggestion to use the solution at a temperature of 120° or 125° F., in the bag or glass container. By the time the fluid has reached the vein it will be some degrees colder, and besides these patients really need this extra heat. With a canula of the proper size there is no danger of injecting the fluid too rapidly. Twenty to thirty minutes may be required to give two or three pints, and this amount has been used in most cases before substantial results are obtained after a severe hemorrhage. It must be remembered that salt solution does not equal blood in value, and it is necessary to inject more than enough fluid to replace the amount lost. My experience would indicate that fully three times as much salt solution is required. At any rate, we should

be guided by the effect upon the patient, and fortunately we are generally enabled to obtain prompt and satisfactory results in appropriate cases.

Finally, the provisional ligature is tied, after removal of the canula, and the wound dressed as a simple incision. In some cases it is necessary to resort to a second transfusion, perhaps in the night following the operation, in which case another vein should be selected.

My experience with intravenous transfusion has not been extensive. I have only resorted to its use in the small number of cases where much blood has been lost during an operation. The last time was after a supravaginal hysterectomy for myofibroma done last April. The patient lives in most excellent health to-day, after being apparently dead on the table for many minutes. We had no suitable canula ready, the vein had collapsed to the size of a pin, and yet transfusion was accomplished quickly and with almost magical effect.

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W. O. Henry, M. D.:

I would summarize my experience with *the sharp curette* as follows:

While the uterine sharp curette may become a dangerous instrument in the hands of the unskilled or careless, and therefore should not be used at all by such persons, still it is a useful and valuable instrument when rightly used.

The objects in using this instrument are, to remove suspicious, infected, unhealthy, or other obnoxious tissue not so well removed by any other means.

In acute septic or gonorrheal infections of the endometrium the instrument should be used thoroughly and its use should be promptly followed by a free application of pure carbolic acid for the double purpose of destroying any infection within reach which he may have omitted to remove, and also to seal up the open mouths of ducts and blood vessels, to prevent further absorption.

The sharp curette is not a dangerous instrument in the careful hands of a skillful man, but any instrument may become the implement of disease, disaster, and even death, in the hands of either the ignorant or learned if unskillfully or carelessly used. I fully agree with those who greatly deplore the so frequent use of this instrument in the hands of careless and

unskilled men, and I am sure we cannot too strongly condemn such use of it. I would be willing to go further and say that such use of it by men who are either too lazy to learn how, or too incompetent to properly use it, is nothing short of criminal. It is a very plain and simple instrument, potent beyond expression for good, but a tower of strength for evil, unless wisely, carefully, and skillfully used. Yes, it is a dangerous instrument and should not be carelessly or improperly used by the ignorant or by the highly educated. A soft, septic uterus may be perforated by it; yes, and a dull curette, used in the same manner, will likewise perforate such a uterus. If any instrument can safely be used in the uterus at such times, the sharp curette may be used, and it will do more good than any other instrument, though in such cases I doubt the utility of anything short of uterine ablation. But here again I think we may agree, for I believe the bow of any curette, whether sharp or dull, should be large and fully half or three-fourths of an inch across. I am inclined to believe that part of the misunderstandings of the past have come from failing to define, with clearness, the size of the curette which is being discussed. There is a very small sharp curette, whose bow or loop is about one-quarter of an inch across, and would easily and almost unconsciously, to even a skillful operator, perforate a soft uterus. But so would a dull curette, of equal size, and not only because such an instrument might perforate the walls, should it never be used, but also because such an instrument in the uterine cavity is too small to be of any material benefit. Hence, I would insist that the uterine sharp curette in the acute septic cases, particularly, always be not less than half an inch in diameter, and three-fourths of an inch is generally better still.

Take now the further objection that it is a dangerous instrument because it removes the wall of leucocytes, which nature has thrown out as a protection against infectious germs. I grant you it is a mistake to destroy this wall of protection, however feeble it may be, unless you do something that will render that wall unnecessary, or erect something better and more efficient in its place. And here once more I am sure there has been, no doubt, a misunderstanding. It must be conceded that no matter how freely and thoroughly the curette and the irrigations may be used in one of these cases, there is no possibility of thus getting rid of all septic contents in the uterine

cavity, and if you have now left a larger raw and quickly absorbing surface, where there remains a supply of infective material, your patient is not made better, but rather worse. But here is the vital point, which is too often overlooked. Having used the sharp curette carefully, but thoroughly, and having gotten rid of all débris, infected endometrium, and other obnoxious tissue so far as possible, now to complete the treatment, and render this wall of leucocytes, that you have destroyed, no longer necessary, apply freely to the uterine wall pure carbolic acid and seal up the mouths of all open absorbents, and destroy all germs within reach. Now, although you have destroyed the wall of leucocytes, and left a larger open surface by means of the sharp curette, still, by the free use of this powerful antiseptic, you have interposed a more efficient wall of protection against absorption of infection and, further, you have gotten rid of all infection within your reach.

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Theo. Barnes, M. D.:

A close attention to the details of after-treatment will prevent a great deal of anxiety on the part of the physician, and may prevent a litigation in the future.

It is in the so-called *after-treatment of fractures and dislocations* that the general practitioner usually makes his greatest mistakes. As soon as the swelling will permit, he places his fracture patient in a permanent dressing and requests him to "report occasionally for inspection." Frequently these indefinite instructions are the ground-work for future trouble. Sometimes we find a physician who is so forgetful of his own and his patient's interest as to instruct him to remove the dressing after so long a time, thereby allowing his patient to escape from his observation without a knowledge of results obtained. The physician who is thus careless of his and his patient's interest is guilty of malpractice, and need not be surprised to wake up some time with a suit on his hands.

A fracture or dislocation on which the future comfort of the patient and usefulness of the limb is involved should be seen almost daily.

The surgeon should see that massage and passive motion are instituted at the proper time and in a correct manner. He should see that the dressings are serving the purpose intended, and that no undue pressure is being exerted in any place. If

he deems it necessary to make a radical change in his manner of dressing a certain fracture, he should not hesitate to make the change. The age of patient should always be taken into consideration when dressing and caring for fractures.

Dislocations require almost, if not quite, as close attention as fractures, and frequently require closer attention during the after-treatment. Severe sprains should be considered in the same class as dislocations. Improper adhesions are frequent sources of trouble in sprains and dislocations, and should be prevented if possible. By breaking up these adhesions in old cases we are frequently able to greatly increase the usefulness of the joint.



R. C. Coffey, M. D.:

On the principles and mechanics of *abdominal drainage* I present the following deductions:

Fluids are rapidly absorbed by the peritoneal cavity; crude or granular matter only through lymph spaces at the diaphragm.

A drainage tract always contains micro-organisms.

Any form of drainage is isolated from the free peritoneal cavity in six hours.

A drain causes a flow of serum by irritation, which is profuse in proportion to the amount of drain within the peritoneal cavity.

This flow is delivered to the surface only in proportion to the amount of drainage passing out through the wound.

Serum and pus accumulate around drainage only when the drainage at the outlet is less than that contained inside, or is not sufficiently extensive to deliver the fluid before it is filled with debris and granulations.

Blood and pus are never found in the neighborhood of a properly applied drain after forty-eight hours.

The flow of serum dissolves blood-clots and thick pus, leaving the gauze clean and white by the time it ceases.

The flow of serum does not occur to any extent in formed abscess cavities; therefore, blood and pus are not well drained from them by capillary drainage.

A tube will drain a walled cavity and will drain the peritoneal cavity under the influence of gravity, but not otherwise.

A single tube is much more likely to be choked by intestines and omentum than two or more parallel tubes.

Gauze drains in proportion to the amount coming through the opening, and will only drain when it is in contact with dressings or clothing, or when its outside end is at a lower level than the cavity to be drained.

Small gauze drains are likely to be choked at the exit, unless covered by a tube or protective.

There are three cavities of the peritoneum to be drained, the right and left flanks separated from each other by the spinal column, and the pelvis separated from the flanks by the psoas muscles. Either flank holds more fluid, and is an inch deeper than the pelvis, and its bottom is more than four inches below the top of the divide made by the psoas muscle on which the appendix rests. The body must be elevated to an angle of fifty-one degrees to bring the bottom of the flank on a level with the divide, and sixty or seventy degrees to properly drain by the Fowler position. The entire cavity can be drained by gravity by a lateral position.

Drainage should always be in contact with the parietal peritoneum on one side. A line drawn in the center of the perineum to the tip of the shoulder passes through the pelvis and deepest part of the flank, and on the right side through the appendix. These diagonal lines we call the right and left drainage lines. Drainage should always be placed external to these lines, or just above the pubic bone.

If only one of the three cavities is infected, it alone should be drained.

Conclusions.—Drainage must be extensive enough to do its work in less than six hours, and should reach the bottom of every infected cavity, either by gravity or drains. It should not be removed until it is loosened, which varies from six to fourteen days. Given the principles and mechanics of drainage, and a competent surgeon is able to fit his method to the case. Peritoneal drainage, intelligently used, is one of the most effective life-saving agents at our disposal.

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T. W. Lipscomb, M. D.:

I will report a case of *missed abortion*. Mrs. B., a healthy woman, was married on October 4, 1905. A menstrual period started on October 11 following and lasted five days. Amenorrhea then ensued, and the usual accompanying symptoms of pregnancy followed—vomiting, enlarged breasts containing

milk, and increasing size of the abdomen. Later, the patient thought she felt fetal movements. I was engaged to attend during the confinement, which was expected during the latter half of July. I was not sent for till September 10, when after a few hours' labor, there was expelled a placenta and well-formed fetal sac of about two months' pregnancy, but no trace of any fetus. Evidently the fetus must have perished at that stage, but no abortion followed, and the patient carried for a further period of over eight months. The abdomen was about the size of a seven months' gestation, but was due to an excessive deposit of fat in the abdominal wall, this being accounted for by the tremendous appetite during the latter half of her pregnancy. Such a case is worth recording from a medico-legal aspect. ◆ ◆

C. L. Goodrich, M. D.:

I was called in a case of *prolapsus funis*. Found patient restless, excited, afraid of death, pains very irregular; sometimes very hard, again very light. Had done hard day's work making soap, and in an unguarded moment had strained heavily in lifting a kettle. This was followed by expulsion of "the waters" and violent, rapid pains which had either become less hard when I saw her, or she had become more accustomed to them, hence described them as lighter.

Vaginal examination disclosed a gelatinous tumor well down in front of the presenting head, which latter was presenting in the right occipito-posterior position. This tumor was about one inch in diameter at dependent portion, and had a soft, mushy, gelatinous sensation to the touch and was distinctly oblong and boggy like a mucous polypus. There was no pulsation, and as the head was well engaged it was impossible to follow the mass to its attachment.

The tumor seemed rigidly attached and it was not possible to withdraw it sufficiently to observe it. However, there was no history of any discharge and inconvenience before labor, and after a careful second examination of the upper part of the tumor, I discovered that it was the cord twisted upon itself until it seemed to have a single pedicle, and upon a close examination could distinguish no fetal movements or heart-sounds.

Having made a diagnosis of prolapse of the cord, the next question was a method of relief. Hirst says, try manipulation

with the intention of reposition, first placing your patient in the Trendelenburg position. This I tried at once, but owing to the engagement of the presenting part being complete could not avail anything. For the same reason, version was impossible, though attempted, and so I was compelled to hurriedly prepare for it and apply the forceps.

Delivery was very difficult, as I anticipated, and the child was removed (dead, of course), and then I found why it was that the traction made on the cord was not successful in drawing either end out. The cord was tightly wrapped twice about the child's neck, leaving only the short loop which had passed down the side of the child's face, and seemed so rigidly adherent above as to give me the false opinion that I had to deal with a mucous polypus, whereas, it was a prolapsed cord twisted upon itself.

Had not the placenta come away with the child intact, I might have had still greater difficulty in delivery, but this, fortunately, was the case, and the mother, with the usual vigor of her class, made a good recovery.

♦ ♦

N. Macphater, M. D.:

There are those who in cases of *pelvic abscess* advocate abdominal section for the liberation of pus in whatever part of the abdominal cavity or pelvis it may chance to be located. We do not agree with these reasonings. Pus should be removed with the least degree of danger to the patient. In the ordinary run of cases of pyosalpinx, abdominal section should be the general rule. But in many chronic cases of such condition where the distention has been great and where the abscess fills up considerably one or the other iliac region, where adhesions are great, there is an easy method of liberating the contents of such an abscess by the vaginal route, in those instances where the abscess is developed in the areolar tissue beneath the peritoneum. These frequently become attached to the abdominal wall just above Poupart's ligament and can readily be liberated there. When an abscess becomes attached to the abdominal wall, symptoms indicating such a condition are frequently present. The abdominal wall itself at the point of attachment will become red, tender, and edematous. There is not the least degree of danger in opening down upon an abscess when thus attached. The peritoneal cavity is entirely

shut off and the procedure becomes as simple as the opening of an abscess anywhere on the outside of the body.

We come now to a consideration of the methods in dealing with an abscess that has formed between the folds of the broad ligament. These may be adjacent to the uterus or they may be farther out toward the ilium. In many of these instances patients are reduced in health and strength and cannot well withstand the shock of a prolonged operation. Besides, there are distinct objections to abdominal section for this particular variety of abscess. The writer for several years past has adopted certain methods for the evacuation of these abscesses that have proven to be uniformly successful. When, for instance, an abscess has developed between the folds of the broad ligament and adjacent to the uterus, its contents can be liberated without danger and quickly. All the instruments that are required are a scalpel and tenaculum. The patient has been prepared over night for the operation by having had a bath and taken a purgative. An enema and douche are given before the operation. The anesthetic is given and the patient is thoroughly cleaned and douched. In the simple operation that follows advantage is taken of the fact that the uterus possesses a capsule and this is used as a guide to the abscess.

The operation is performed in the following manner: With the tenaculum the cervix is drawn down and to one side. An incision three-quarters of an inch long is made across the cervix near the fornix. The index-finger is insinuated into this cut and the capsule separated. The finger then burrows up the side of the uterus. In this way one can rapidly guide the finger to the wall of the abscess cavity. With but very little effort and, if necessary, a little scratching with the finger-nail, the finger enters into the pus cavity. The finger can now be withdrawn followed by the pus. All this can be accomplished in less than five minutes. The cavity can then be washed out and packed if necessary and is entirely under the control of the surgeon. When an abscess forms not close to the uterine wall, but rather adjacent to the ilium, there is a method of liberating its contents without the danger of opening the peritoneal cavity. It will be remembered that the peritoneum, as it passes up over the fascia that covers the iliacus muscle, is not intimately attached thereto but has a considerable amount of connective tissue intervening. Taking advantage of this ana-

tomical fact one can make an incision one inch below and little to the inner side of the anterior superior spine of the ilium. The finger then burrows down and into the abscess. The abscess can then be washed out and drained.

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D. T. Tayloe, M. D.:

A case that I wish to report is an *operation for occlusion of the cystic duct*, with calculi in the gall-bladder.

Mrs. B., white, age fifty-five, much emaciated. At various times within the past two years she suffered repeated attacks of hepatic colic and jaundice. Eventually there appeared enlargement, with tenderness upon pressure below the point of the ribs on the right side, and she complained of acute pain at times in this region. I detected an indurated mass at the lower margin of the liver, which was quite movable. The outline was rather globular below, but extended upwards beneath the liver, and inclined upon her right when patient turned upon her right side, and towards the median line when she turned upon her left side. When she lay upon her back the mass corresponded to the usual site of the gall-bladder, and could be lifted upward and forward by the fingers thrust under it. I was told by her physician that this enlargement would disappear at times, and recur at frequent intervals. Considering the great mobility of the mass, with recurrent attacks of pain and jaundice, there was strong ground for suspecting an obstructed gall-bladder with retained biliary calculi, and this is the diagnosis upon which I operated.

The upper right abdomen was opened and the distended gall-bladder brought into view. Introducing my finger outside of the gall-bladder I felt a number of gall-stones within the cavity, and with a view to their removal I incised that organ sufficient to admit a calculus scoop, and removed several stones. Upon introducing my finger into the gall-bladder I felt distinctly a gall-stone slightly embedded in the cystic duct, in all probability acting as a ball valve, which would account for the distention and disappearance of the gall-bladder and the recurrent attacks of pain and jaundice. I succeeded in removing this stone with some difficulty. I then stitched the gall-bladder in the usual way to the edges of the abdominal wound. There was considerable discharge of bile and later of watery mucus. The patient left for home on the 28th day with the wound closed, and perfect restoration to health.

Book Reviews.

A TEXT-BOOK ON THE PRACTICE OF GYNECOLOGY. For Practitioners and Students. By W. EASTERLY ASHTON, M. D., LL. D., Professor of Gynecology in the Medico-Chirurgical College of Philadelphia. Third Edition, Thoroughly Revised. Octavo of 1096 pages, with 1057 original line drawings. Philadelphia and London: W. B. Saunders Company, 1906.

There had been a demand for years for a work on gynecology which would assume that the practitioner needed complete and detailed instruction about the minor as well as the major work in gynecology. Every physician had cases in his practice which he felt he should treat himself, and in the event of surgical work being required he should be able to do at least the minor work with safety and intelligence. Occasionally, too, in communities where expert surgeons and consultants were not easily procured, the physician found himself called upon to assume the responsibility of a serious case or to perform a more or less complicated operation. For this purpose the average work on gynecology was poorly fitted, as they are for the most part written for specialists, but Ashton, realizing with considerable acumen the needs of the profession, wrote a work that took nothing for granted but states exactly what should be done in each individual case and gave such directions and illustrations as to make the work explicit and easily and intelligently followed. The success of a work written along these lines is best indicated by the fact that the third edition has been called for within one year, a record immensely gratifying to both author and publisher. In this new third edition alterations and additions have been extensive, old illustrations have been withdrawn and new ones inserted. Those parts dealing with Diagnosis and Surgical Technique have been changed to suit later developments and discoveries, so that the whole at the present time is a complete exposition of the subject from the view point of the methods of to-day. There can be no doubt of the continued success of this very meritorious work.

ABDOMINAL OPERATIONS. By B. G. A. MOYNIHAN, M. S. (London), F. R. C. S., Senior Assistant Surgeon at Leeds General Infirmary, England. Second Revised Edition, Greatly Enlarged. Octavo of 815 pages, with 305 original illustrations. Philadelphia and London: W. B. Saunders Company, 1906.

The compliment paid to Moynihan by the medical profession was to exhaust his excellent "Abdominal Operations," in a few months; and a second edition is now offered with additions to

the text and illustrations, revisions and two chapters entirely rewritten.

Too much in praise cannot be said of this volume which embodies the work of a brilliant specialist in a specialty in surgery. While freely crediting the results and suggestions of his co-workers all over the world, with a special tribute to May Robson, in no present treatise of which we have any knowledge is the surgeon's personality so completely and agreeably impressed upon the reader. No one can fail to understand his viewpoint, neither should they have any difficulty in comprehending his technique in what has until recently been a terra incognita: namely, Gastric Surgery. This work is invaluable to the Abdominal Surgeon, and in the field to which it is purposely limited by the author, the subjects are treated in the exact and definite manner of a practical worker addressing his fellow surgeons. Surgery of this kind is a matter of evolution, but Moynihan gives it almost the stamp of originality.

AMERICAN PRACTICE OF SURGERY. By DRS. JOSEPH D. BRYANT and ALBERT H. BUCK. Complete in eight volumes. Volume Two. Profusely illustrated. William Wood & Company, 1907. New York.

The second installment of this System of Surgery, maintaining the high degree of excellence noted in the introductory volume, invites the serious consideration of physicians and surgeons desiring to be equipped with the most advanced thought in modern surgery. Volume Two is devoted to a consideration of those diseases which in a varying degree belong to the domain of surgery, and which are found in certain portions of the United States and its dependencies, and in Canada.

Leprosy, Plague, Glanders, Anthrax, Actinomycosis, Mycetozoa, Scurvy, etc., with special reference to diagnosis and surgical treatment are exhaustively treated by Surgeon Leys of the United States Navy; Tuberculosis from a surgical standpoint by Virgil P. Gibney, Surgery of the Skin by D. W. Montgomery, Surgery of the Nerves by DeForrest Willard and Surgery of the Lymphatic System by Charles N. Dowd. For completeness of detail and particularly for original observation and exhaustive studies in various lines this work is especially worthy of mention. The work is profusely illustrated, many of the instances being of actual cases in the experience of the writers and others taken from the works and articles of competent observers.

The publishers have as before omitted no detail of the printer's and binder's art to make an attractive volume.

Translations.

Fetal Rupture of Vaginal Wound after Hysterectomy.—Kamann (Monats. f. Geb. u. Gyn.) removed the uterus from a woman aged thirty-six. She had undergone an operation eleven years previously for vaginal prolapse, it had recurred and the elongated cervix uteri protruded from the vagina whilst the uterus bore a fibroid. When that organ was removed the peritoneum was not systematically closed, but the stumps of the appendages were fixed by suture to the angles of the vaginal wound and then sewn together, and the ends of the catgut threads uniting the vesical peritoneum to the anterior vaginal wall were tied to the ends of the threads uniting the posterior vaginal wall to the peritoneum of Douglas's pouch. The vaginal walls were also made narrow by plastic measures. Fifty-six days later, convalescence having been quite satisfactory, the vaginal wound yielded when the patient was at her employment as a laundress, and nearly five feet of small intestine with omentum protruded. The gut and omentum were carefully cleaned and replaced, and the ruptured vaginal wound closed. But acute peritonitis set in, an entero-vaginal fistula developed and the patient died three weeks after the reduction of the rupture. Suppurative peritonitis was detected at the necropsy. The closure of the peritoneum brought about indirectly by the means above given had resulted in an incomplete, weak cicatrix which had yielded during exertion.

Semilateral Position in Operations for Appendicitis.—Försterling (Zentralbl. f. Chir.) reports that for a long time Professor Schlange of Hanover, in operating in cases of both acute and quiescent appendicitis, has modified the usual position of the patient on the table, with the result of facilitating to a considerable extent a free exposure of the seat of the disease. The body is turned over towards the left side, the right side being raised by about 4 or 6 inches so that a line drawn from one antero-superior spine of the ilium to the other forms with the surface of the table an angle of from 30 to 35 degrees.

This modification has been very useful in cases of acute appendicitis in which there is not much suppuration and the intestines around the inflamed cecum are not firmly adherent. In such cases the intestines, which are usually much distended and project through the external wound, fall backwards towards the left side of the abdominal cavity and can be readily kept controlled by gauze pads and retractors. The appendix, especially when attached to the posterior surface or the lower extremity of the cecum, can then, it is stated, be exposed with

surprising readiness. The semilateral position has been found advantageous also in cases of appendectomy performed in a quiet interval, but is certainly less useful in operations performed for the exposure of a large and circumscribed perityphlitic abscess.

The Curette after Abortion.—The finger, every practical surgeon is aware, should always be preferred if possible to the most cunningly devised instrument. There are limits, however, to the powers of the human digit. The defining of such limits is a most instructive subject. It is especially the duty of the obstetrician to make sure about the relative value of the finger and the curette, an instrument widely used in this country for the removal of placental relics after abortion, yet its value as a safe and efficient contrivance is disputed in its native land. Professor Lepage (*Ann. de Gyn. et d'Obstét.*), Obstetric Physician to the La Pitié Hospital, Paris, maintains that it is not reliable. He agrees with Pinard and Budin that the curette is a blind agent. The former authority, he observes, systematically rejects the curette, and teaches that in all cases the finger should be employed. Budin impresses on his pupils his opinion that the finger alone can detect whether there be any abnormal material in the uterine cavity. Lepage publishes the most candid record of his own experiences; indeed, he admits that even the finger may prove unreliable. This fact was proved by a case under Vivier and Faure; the curette was employed, after a simple clearing out of the uterine cavity by means of the finger had failed, yet bleeding and fever continued, so that Faure thought vaginal hysterectomy advisable. The patient recovered from that operation; a piece of fetal placenta was found incarcerated in the left uterine cornu, the finger having failed to recognize and the curette to reach it. Vivier and Faure's experience in hospital practice, we may add, may be profitably considered by others who often hesitate to treat abortion, but are not in a position to resort to such extremes as hysterectomy when the finger and curette fail.

Lepage himself, a most skillful and experienced obstetrician, having under his charge patients placed in the most favorable conditions for observation and treatment, testifies that in three such patients he failed to remove or even detect a considerable amount of retained placenta. In the first case he made use of the finger when the curette had already failed in other hands, and detected and extracted a mass representing about three quarters of the placenta, but too late to save the patient's life. In two other cases he himself believed that when using the curette all placental tissue was removed as the instrument seemed at length to grate against uterine tissue in all directions. Yet in the second case the patient expelled a placental mass as big as a billiard ball six days after she had been curetted.

the third Lepage was called in on the second day, and feared when summoned that he had perforated the uterus through scraping its interior too thoroughly. On arriving he found that the patient had had several characteristic pains, coming on at intervals of two minutes. He removed a tampon from the vagina, and then discovered the placenta lying almost completely outside the os externum.

Lepage also quotes Laroyenne's case in which the finger was introduced three days after the curette—and a fetal foot extracted! Denis relates a case in which the curette was used by a distinguished living obstetrician. For five minutes it was made to scrape the uterine walls *sans ramener de fongosités*. The professor very properly explored the uterine cavity with the finger in order to make sure of one matter of some importance in any abortion case. His doubts were settled, for he found a three and a half months' fetus with placenta complete. Another obstetrician used the curette after dilatation in a case of uncontrollable vomiting, but suspected that the curetting was not complete. His suspicion was correct, as the patient was delivered at term of a live child, but the little operation was followed by complete disappearance of the hyperemesis. M. Lepage's admirable full report of an instance in which, in a private patient, he experienced great difficulty in removing retained placenta even after full dilatation, should be read by every obstetrician. He does not reject the curette, as it is of great value in partial retention of placenta after abortion during the first two months of pregnancy, but he insists that the finger alone can make the obstetrician reasonably certain that no placental tissue is left behind.

On the Diagnosis of Early Cancer.—The Vienna medical committee (Wiener Klin. Wochen.) have recently been specially working at this important subject. They emphasize that pain is rarely one of the early symptoms of cancer. Rectal disease of a malignant nature should be suspected when we find mucus and blood in the stools, with constipation associated with difficulty in defecation. In cancer of the urinary tract hematuria is symptomatic. Very often a diagnosis is hastily made of hemorrhoids in cases of rectal cancer owing to neglect of a careful digital local examination. In cases of uterine cancer pain is never the first symptom. When the examining finger is blood-stained, provided the patient is not menstruating, we are bound to be on our guard. The writers urge that all women should be examined at the menopause. Usually a scraping from the uterus must be made and examined under the microscope in order to arrive at a diagnosis. In early cancer of the stomach we have no very reliable symptoms or physical signs, but an exploratory incision is to be commended in all doubtful cases of this disease.

Hyperemesis Gravidarum.—O. Tuszkai (Berl. Klin.) differentiates between true hyperemesis gravidarum and vomiting during pregnancy, however severe the vomiting may be, dependent upon any organic disease such as kidney disease, stomach affections, tumors, irritable conditions of the brain, etc., upon hysteria.

True hyperemesis gravidarum is a direct result of pregnancy dependent upon peritoneal irritation caused by defective nutrition of the peritoneum as it becomes stretched by the increasing uterus. It is true that in some cases in which the peritoneum is stretched to an unusual extent, as with hydramnios or multiple pregnancy, vomiting may not occur, but facts such as these are explicable on the theory of individual peculiarities in the elasticity of the peritoneum. Tuszkai allows that his theory does not admit of rigid proof, but it is nevertheless the less worthy of credence on empirical and rational grounds. Further proof of an empirical nature might be obtained by inquiry into cases in which before pregnancy there had been metritis or perimetritis; in such cases there should be during pregnancy a greater sensitiveness of the peritoneum and a greater tendency to vomiting. In specific hyperemesis there is marked tenderness on bimanual examination. The fact of sensitiveness being also present in the case of many hysterical women, whether pregnant or not, is only another instance of the simulation in hysteria of organic disease. The fact that vomiting often ceases during the second half of pregnancy is explained by the relative increase in size of the uterus during the two periods. In the first half of pregnancy the uterus increases tenfold, but in the second half it only doubles its size; moreover, the blood supply of the uterus is more abundant during the second half than the first half of pregnancy.

The author is opposed to the toxemic theory of true hyperemesis gravidarum. He gives two cases in which William's ammonia coefficient was estimated. In one case the coefficient was as low as 4.1 per cent., which on William's theory would exclude the possibility of toxemia; in the other the coefficient was high, but remained high after vomiting had ceased. On anatomical grounds, vomiting as a result of peritoneal irritation is easily understood, the reflex paths being simple and direct. Even so eager an advocate of the toxemic theory of hyperemesis as Dirmoser says that any increase in the volume of the uterus increases vomiting, and a diminution often at once relieves it.

For purposes of treatment when dilatation of the os is needed the author uses an instrument of his own construction. This is a modification of a Fritsch-Bozemann's uterine catheter made in metal, when anterior parts, as in Hegar's dilators, can be supplied in different sizes; a smaller tube lies within the larger one, and through it fluid at the desired temperature can

circulate. When a warm local application is needed the author used a long double-channeled metal catheter, to the end of which a hollow india-rubber bladder is fastened; lukewarm water at first and later warm water is passed through the instrument.

The following are his conclusions on the subject: (1) Hyperemesis caused by pregnancy is one of the rarest complications of the condition. (2) A clear distinction must be drawn between vomiting occurring during pregnancy and specific hyperemesis gravidarum—all diseases which cause vomiting in pregnant women, such as enterogenous toxemia, stomach affections, meningitis, peritonitis, etc., must be excluded. (3) The diagnosis of specific hyperemesis gravidarum can be made if (a) all the above-mentioned diseases can be excluded; (b) if the characteristic clinical symptoms are present—the great local sensitiveness of the peritoneum of the uterus which is not only increased by bimanual examination, but on such examination gives rise to strong vomiting; and (c) if the pregnant and violent vomiting is independent of the intake of food, and leads in a comparatively short time to symptoms of inanition. The signs of inanition are described. (4) The symptoms of hyperemesis gravidarum depend on the condition of irritation of the peritoneum which, probably as a result of individual peculiarity, causes local atrophy, and therefore is in direct connection with the pregnancy. (5) The prognosis depends on the grade of inanition, and this can be judged as a result of biochemical investigations such as are described in the article. (6) Etiological treatment can be given, and is at first conservative, consisting in local cold, warmth, complete rest, and large doses of opium; and next, if these are of no use, in interruption of the pregnancy.

Surgical Treatment of Vesical Tumors.—Treplin discusses the surgical treatment of tumors of the bladder, comparing the present day results with the results of less recent times (Deut. med. Woch.). In the olden days, tumors of the bladder were regarded as entirely untreatable, and even when the organ was opened to remove a suspected stone, and it was found that the disease was due to vesical tumor, no attempt was made to remove the same. At first, these tumors were removed by means of the lithotrite, and in 1874 Billroth performed the first "high operation" for the removal of a myosarcoma. The introduction of modern renal surgery opened up a new era for the treatment of bladder tumors. In the early days one distinguished between fungus and cancer of the bladder. Then a further variety was recognized—namely, villous cancer. But it was soon shown that these villous growths were benign, or at all events that many of them were. The modern classification allows of benign villous tumors and carcinomatous villous

tumors. The author states that in Kuemmel's clinic six cases of villous cancer were operated on, in which there was evidence that these were originally benign tumors and had undergone malignant degeneration. In three of them the primary tumors were removed and proved to be papillomata; but recurrence took place, and the character of the secondary growths was undoubtedly malignant. The other three cases presented long histories—fourteen, eight, and two years respectively—that he thinks that he is justified in being highly suspicious of their having been benign to start with. Sarcoma of the bladder is very uncommon, while large cystic tumors are still rare.

Turning to the diagnosis, he finds that this can be controlled with a degree of certainty by the cystoscope; but even when a tumor is definitely seen in the bladder, it is not always possible to determine whether it is benign or malignant. The method of operating for vesical tumors is the high operation—the suprapubic cystotomy. With regard to benign tumors, the prognosis after operation is very favorable, but with carcinoma it is not good. However, he finds that the chances for the patient are scarcely worse in cancerous tumor of the bladder than in cancer of any other organ. Of 30 patients operated on at the above-mentioned clinic, 6 may be regarded as being cured after the course of from five to sixteen years. In 5 cases the tumor was a carcinomatous villous tumor, while in the sixth it was a spindle-celled sarcoma. But even when one fails to cure the patient one is certainly capable of alleviating his unfortunate condition. He mentions that the anesthesia which he employs for the operation is lumbar anesthesia.

Pyelonephritis Complicating Pregnancy.—Rudaux (Clin.) finds that pyelonephritis is a frequent complication of pregnancy. It occurs usually in young women, especially primiparæ. It is nearly always localized on the right side, but is also sometimes double. It appears in the fifth or sixth month of pregnancy. The onset is insidious, and may not be noticed where no regular examination of the urine is made, until either local or constitutional symptoms make their appearance. The diagnosis is difficult when the general symptoms mask the local signs, as pyelonephritis may not be suggested. The patient has a rigor, high fever, vomiting, and either diarrhoea or constipation, and diagnosis can only be made after a careful examination of the abdomen and the urine. The right lumbar region is the seat of pain, which may be either acute or chronic, and which is increased by pressure, and extends to the groin and down the thigh. Bimanual palpation is not easy in the later months of pregnancy, but it enables one to determine the painful area, the resistance of the muscles and abdominal tissues, and any increase in the size of the kidney.

vaginam pressure on the ureter causes acute pain, thus differentiating the condition from appendicitis or salpingitis. The urine contains blood and pus, as well as casts, epithelium, and granular débris. The reaction is usually acid, and the amount passed is decreased; the specimen is best obtained by catheterization. When pyuria is the only symptom the origin of the pus must be discovered. It is necessary to distinguish between cystitis and pyelonephritis; in the former there is frequent and painful micturition, in the latter pressure over the lumbar region nearly always elicits pain or tenderness. If the diagnosis is not clear, it is necessary to resort to catheterization of both ureters, and separation of the urine from the two kidneys.

Calcified Uterine Fibroid: Obstruction: Paraplegia: Bed-sore.—Rieffel and Ricou (*Annales de Gyn. et d'Obstét.*) attended a lady, aged sixty, once pregnant forty years earlier. The menopause occurred at forty-eight. The patient had been subject for a year to slight hemorrhages and leucorrhœa, with lumbar pains radiating to the sacrum and thighs. The abdomen became distended. Just a fortnight before she came under observation paraplegia occurred, suddenly, without cerebral symptoms; intestinal obstruction slowly developed. Purgatives being given profuse diarrhea set in. The bladder was paralyzed, so that the catheter was necessary; there was no difficulty in introducing the instrument. A bad bed-sore formed within a few days. When examined the temperature was 100.5° F., the pulse weak but slow; there was free fetid leucorrhœa. An intensely hard tuberos mass was fixed in the pelvis. The patient was kept at rest for a few days, and ice was applied to the belly; the pains and diarrhea diminished; then the abdomen was opened. The hard mass proved to be a calcified pedunculated fibroid, the pedicle as thick as a finger. It was divided, and then subtotal hysterectomy was performed. Gauze was passed into Douglas's pouch. On the evening after the operation the patient passed urine voluntarily, and the paraplegia (which had been motor, not sensory) diminished. On the fourth day the gauze was removed, and there were no signs of sepsis or peritonitis. The bed-sore, however, did not heal, but began to extend, and the patient died on the tenth day.

Indications for Curetting.—Platon of Marseilles (*La Clinique*) gives a very full summary of the conditions under which curetting may be employed, and of the mode of procedure which is most to be commended. Reminding his readers that the success of the operation depends upon the peculiar property of rapid regeneration possessed by the uterine mucous membrane, thanks to the presence of the chorion, and of the glandular *culs-de-sac* left untouched by the instrument, he enumerates the various modes of action of the curette as being

at times modifying and evacuant, at other times exploring or destructive.

The choice of instruments is a matter of some importance. Platon prefers, as a rule, blunt rather than sharp curettes, forcible scraping being sufficient, and cutting unnecessary, when the tissue is fairly resistant. The operating case is to contain two curettes, two pairs of vulsellum forceps, a pair of long dressing forceps, a sound furnished with a flu apparatus, and a vaginal speculum; with the addition of a dilator and a set of Hegar's bougies if tents have not previously employed. In puerperal cases very large curettes on long handles are used, and Pinard's instrument gives successful results. Platon lays stress upon the importance of cleansing and disinfecting before curetting as thoroughly as in preparing for a more serious operation, and prefers general to local anesthesia. Reserving bougies and dilators for urgent cases, he recommends the insertion of laminaria tents for some days before, beginning with a small size and introducing larger sizes daily until, on the fifth day, the operation takes place. Pain and nausea he combats by means of frequent hot compresses to the epigastrium. In describing the details of the curetting, he advocates the introduction of a metal drainage tube in septic cases, and of a glass drainage when a tampon is desired, either to be removed after forty-eight hours, and the patient in slight cases to be allowed to leave her bed on the eighth day. Douches of sterilized water six on the first day, four on the second, and afterwards two daily prescribed. Special caution is necessary in post-partum cases where the uterine tissue is softened and attenuated, and in circumstances the finger is to be preferred to the curette. Hemorrhage is rare, is generally caused by the insufficient removal of diseased tissue, and is cured by a further application of the curette or the exploring finger. Adhesions leading to obliteration of the cervical canal and consequent sterility can only be caused by the scraping having penetrated too deeply into the submucous tissue.

After abortions Platon recommends curetting as a routine practice whenever the medical attendant has been unable to remove personally that all the uterine contents have been expelled. Curetting is useful in chronic metritis, mucous polypi, and in uterine fibroids; even salpingitis and other inflammatory conditions of the adnexa will be helped by its employment. Platon finally recommends it as a prelude to every vaginal hysterectomy.

Ptyalism in Pregnancy.—Rudaux (La Clinique) says that ptyalism is a complication of pregnancy which is characterized by exaggerated salivation. The woman who suffers from it always has her mouth full of saliva, which renders the b

extremely foul, and gives her a disagreeable and nauseous taste. This continues all day, and sometimes even at night, so that sleep is interfered with. The quantity of fluid varies very much. It may be as much as two liters, or even more. The patient must always have some receptacle beside her. In other cases the quantity of saliva is not very great, but it is constantly appearing in the mouth, and the patient has always to use her handkerchief. The fluid is limpid and clear. Schramm maintains that it does not contain ptyalin.

The submaxillary and sublingual glands are increased in size. The gums are inflamed. The tongue is red at the point and at the edges, while the dorsal aspect is pale and often covered over with a thick coating. The breath is fetid, and the patient complains of having a disagreeable and nauseous taste in the mouth. Sometimes deglutition becomes difficult. Vomiting is frequent, and may be uncontrollable. Diarrhea is by no means rare in such cases. Gaulard asserts that he has observed a certain alternation between ptyalism and diarrhea. Constipation accords with an absence of salivation, while diarrhea lessens, or causes to cease altogether, the hypersecretion of saliva.

This complication may appear during the first month. Sometimes it shows itself before the first monthly period has ceased. It usually continues into the fifth or sixth month. Some women are more predisposed to it than others, for it may be observed during several successive pregnancies. A history of nervous disturbance, and especially of hysteria, can often be obtained. Ptyalism influences the organism by the digestive disturbances which its presence entails. Digestion is impaired, and absorption is incomplete. Rapid emaciation ensues; the face assumes a leaden aspect, the skin becomes dry, and the state of the patient becomes somewhat torpid. There are often also headaches, repeated vomiting, attacks of diarrhea, albuminuria, and secretion of urine below the normal. In one case published by Professor Pinard the patient had only passed 100 grams of urine in twenty-four hours, although she had expectorated at least 1 1-2 liters of saliva.

The presence of these conditions should not surprise us if we find ptyalism present. It is, after all, but one of the many forms of auto-intoxication in pregnancy. The treatment consists in giving a carefully selected diet, in attending to the gastro-intestinal tract, in favoring diuresis, and in getting rid of toxic material already present in the body.

Acute Torsion of Pedunculated Fibroids.—Boursier (Rev. de Gyn. et de Chirurg.) reports two cases of torsion of a pedunculated subserous fibro-myoma of the uterus, one in an old and the other in a young subject. The latter was a single woman, thirty years of age, who after a shock was seized with

a violent fit of pain in the hypogastrium, followed by vomiting. After a few days' rest the symptoms subsided. Repeated attacks occurred, always relieved by rest. The seizure was very severe; it resulted in the discovery of a tumor, and an operation was performed over a year after the attack. A livid, round tumor was discovered adherent to the intestine and omentum; the pedicle twisted spirally, and sprang from the fundus of the uterus; it was ligatured and divided. Recovery was rapid. The second patient was a woman, aged four; the menopause had occurred eight years previously. She was seized with a violent attack of pain, radiating to the loins; there was obstinate constipation without sickness or fever of temperature. A tumor was detected, and the patient was taken into hospital. A hard, round, dark-colored tumor was discovered attached by recent adhesions to the omentum, the intestines, and appendices epiploicæ. The pedicle, one turn and a half, sprang from the left cornu. It was secured and divided; the patient recovered.

Garrulitas Vaginæ or Flatus Vaginalis.—Kosminski (Zentralbl. f. Gynäk.) has observed several cases of this disagreeable condition. Gas may escape from the vagina when there is decomposing matter in the upper part of the vaginal tract, and intestinal flatus may pass through the vagina when there is a fistulous communication with the bowel. Great attention has been laid by Veit on the development of gas in the vaginal secretions through the influence of micro-organisms. The phenomenon has been observed, but it is a secondary and not a primary condition associated with vaginal inflammation, especially colpitis parasitica. More often the bubbles do not enter the vagina, but are sent air coming out of the vagina, for they are formed by air entering that canal. There is a primary garrulitas vaginæ, and it is the most usual type of that affection. Atmospheric air enters the vagina under certain conditions, and when the conditions are changed it is expelled. The presence of air in the vagina escape alike cause disagreeable sensations, but for evidence of the condition patients do not care to consult a doctor except when the escape of air is accompanied with an audible noise.

Kosminski closely observed 4 cases of garrulitas vaginæ. In 3 the patients were under thirty, and all had borne children. By making the patient bend her body forward and press her thighs together air could be made to enter the vagina. When she straightened out her body it was expelled; the patient felt it escaping. Sometimes the expulsion of air was accompanied by a noise. Thus the condition in question is usually due to purely mechanical causes, which are self-evident. The vulvar structures are relaxed in these cases; they gape when the body is flexed, and air enters the vagina. When the patient straightens her body the intra-abdominal pressure expels the air. Kosminski notes

in one of his cases there was much mucus in the vagina quite free from frothiness. After several flexions and extensions of the trunk, which admitted air into the vagina, the mucus became charged with bubbles. In another case the mucus was found to be frothy before the clinical experiments were commenced; it became much more so by the time that they were concluded. Hence the air bubbles had nothing to do in either case with gas-producing germs. As relaxation of the vulvar and vaginal tissues is the cause of this disagreeable condition, the remedy is evident. In some cases the perineum is deficient, and a plastic operation is indicated; in others simple attention to nutrition will suffice; a pessary and an abdominal belt are often of service.

Pancreatitis and Biliary Lithiasis.—Quénu and Duval (Rev. de Chir.) who have recently operated in four cases of pancreatitis in association with biliary lithiasis, publish the results of a wide study of this complication, to which they state but little attention has hitherto been paid by French surgeons. The frequent coexistence of these two affections has long been recognized as a pathological fact, and the increased number of recorded instances in recent surgical literature fully justify the conclusion of Fuchs that the most frequent cause of pancreatitis, whether this be of the hemorrhagic or of the suppurative variety, is biliary lithiasis.

On an analysis of 118 collected cases of associated pancreatitis and biliary disorder the authors find, that the chronic form of the inflammatory affection of the pancreas is most frequently met with in lithiasis of the common bile duct, whilst suppurative pancreatitis is in most instances a complication of vesicular lithiasis, and the hemorrhagic variety of the presence of calculi in the ampulla of Vater. In a very large majority of these cases there is a history of biliary lithiasis of long standing, and it seems that only in rare instances does the pancreatitis show itself before the appearance of any clear signs of hepatic disorder.

In the chronic form of pancreatitis which occurs in about one-half of the cases tabulated by the authors, the inflammatory affection is almost always localized only in the head of the gland, which is either uniformly indurated or studded with numerous hard nodules.

In discussing the pathology of this association of pancreatic and biliary disorders, the authors, whilst acknowledging that in most instances the pancreatitis is the result either of (a) infection by contiguity, of which the common bile duct is the starting point, or of (b) direct ascending canalicular infection of duodenal or biliary origin, hold that it is difficult to explain some cases by either of these views, and that the hypothesis of an original infection common to both liver and

pancreas, and resulting on the one hand in cholelithiasis and on the other in pancreatitis, may be regarded as a logical one.

With regard to the diagnosis, it is pointed out that cholelithiasis frequently remains latent, and cannot be discovered except on direct palpation of the inflamed gland. Pancreatic swelling that can be felt through the abdominal wall affords a valuable sign, but such is of very rare occurrence, and when present does not prove an inflammatory condition of the gland. Positive results, however, may be obtained by the modern methods of urinary and fecal examinations for determining the state of the gland.

In their remarks on the treatment of associated pancreatic disease the authors suggest the advisability of practicing biliary drainage as well as direct drainage of the pancreas. The biliary passages, they argue, are always infected in these cases, and are probably the original sources of the infection. Cholelithiasis and pancreatitis when associated with biliary lithiasis indicate drainage of the bile ducts at a part where free permeability is evident. If the gall-bladder be relatively healthy and of normal size, if the cystic duct be permeable, and if the lithiasis be purely vesicular, cholecystostomy, the authors hold, should suffice, and be regarded as the operation of election. If, on the other hand, the gall-bladder be atrophied, and its walls be degenerated, and the cystic duct be obliterated, it would be necessary to perform cholecystectomy, and to establish drainage by opening, according to the condition of the case, either into the hepatic or the common duct. Entero-biliary anastomosis under such circumstances is rejected on account of the difficulties of its execution, its greater operative danger, and the possibility of a serious secondary hemorrhage.

Treatment of Strangulated Hernia.—Paul Reclus (*Journal des Praticiens*) discusses the treatment of strangulated hernia. He describes the risks and actual dangers of the old treatment by taxis which, in the days of pre-aseptic surgery, was variably attempted. If forced taxis failed as a last resort, an operation was done, and the bowel was then found to be edematous, inflamed, and perhaps actually in a condition of gangrene. There are nowadays only two indications for the methods of simple taxis—old age, especially with diabetes, and advanced albuminuria, when the smallest operative interference is fraught with grave risks of collapse, or of coma; and a septic milieu, without antiseptics, clean scalpel, or dressings. Even then one can always have hot water, and can boil such instruments and dressings as may be at hand. He mentions briefly the proper method of performing simple taxis—the best position of the patient, the hot fomentations, the gentle, gradual pressure by the finger and thumb in the right direction, and the desirability of chloroformization. The process should

last more than ten or fifteen minutes, and should only be undertaken when the case is seen early. In the immense majority of cases taxis should not be attempted, and an operation should be undertaken at once. Local anesthesia is quite sufficient; cocaine, or better still, stovaine, should be used. There is no occasion for ether or chloroform, which both add to the ever-present grave risk of pulmonary complications. The incision made over the neck of the hernial protrusion, one sees the hernia as a sort of perihernial lipoma. This is to be incised, or even "decapsulated," and there then appears a pyriform tumor, which is the hernia itself in its sac.

If one cannot feel quite sure that what one sees is the hernial sac, it probably is not. When actually reached it is easily recognizable, for a few drops of yellowish serum ooze out, and then one sees the gut itself, polished, pink, and like a clean shining bag. On opening the sac care must be taken to drain away the fluid it contains, lest it swamp the field of operation, and perhaps infect the tissues with the *bacillus coli* which is generally present. The knuckle of intestine (or epiploon) is then under the surgeon's eye. The epiploon, if present, should be ligatured and divided. Generally, however, it is not present in the field of operation. It is often desirable at this stage to enlarge the original incision, in order to get a good view of the neck of the hernia. Surgeons used to insert a hernia bistoury then, on the flat, along the index finger, and cut through the constricting band with it as it was withdrawn. Nowadays one cuts down on to the constriction through aponeurosis, muscle, and sac, until there is ample room for the return of the entire hernia. In the case of an umbilical rupture this proceeding is very simple and straightforward; there are no important organs that might be wounded in the neighborhood. In the case of a crural hernia greater delicacy of handling is necessary. Even the femoral vein has been sometimes accidentally opened.

In the case of inguinal hernias the epigastric artery is occasionally met with. When the hernia is freed it is to be closely examined, especially at the point where it was constricted. A deeply congested patch, almost violet in color, may be found there. If not ulcerated the hernia is to be returned into the abdominal cavity. It is rare to meet with ulceration nowadays in these cases because the mischief is seen and dealt with so early. A very limited ulceration should be surrounded by a double series of Lembert sutures. A large area of ulceration makes it necessary to fix the gut at the level of the incision and to make an artificial anus, unless the surgeon is capable of doing at once and on the spot a circular enterorrhaphy. Sometimes either epiploon or gut is adherent. The adhesions must be divided and bleeding vessels twisted. This procedure is not always easy, and one must beware of making a "false reduction" of the rupture. The finger of the surgeon should fol-

low the gut back into the abdominal cavity, to make sure that it is easy and comfortable. The greatest care must now be taken lest the gut be pricked while the surgeon is tying up the pedicle and making it impossible for the hernia to escape again. If the patient is young and in good condition, and the parts are healthy and not inflamed, the wound may be sutured up, and no drainage is necessary. His hernia is then radically cured. The principle of this radical cure is the same, whatever the position of the hernia. One aims at arranging some muscular fibers across the opening in such a way as to preclude the possibility of a future rupture. In umbilical hernia the recti muscles are used, and in the inguinal cases the "conjoined tendon" of the transversus and oblique muscles.

Tuberculosis and Pregnancy.—I. Veit (*Die Therapie der Gegenwart*) makes the following statements: The idea of pregnancy for a tuberculous subject is always a very serious condition, and that she is certain to die in childbirth from some complication, is not to be entertained. The induction of artificial abortion is never indicated when the tuberculous pregnant woman shows a regular increase in weight. This interference is still less indicated when the weight is steadily diminishing, for then one can do no good by such interference. Should the weight be found to increase irregularly or be insufficiently great, then the patient's life is in danger, and this would be an indication for bringing on abortion as a remedy.

Tabes Dorsalis and Pregnancy.—Thies (*Zentralbl. f. G.* No. 20, 1906, quoted in the *Prager Med. Wochenschr.*, No. 1906) describes the case of a thirty-seven-year-old 8-para woman with all the evidences of tabes. The movements of the fetus were not active. There was paralysis of the legs and edema. There was also bladder and rectal trouble, with decrease of the visceromotor power. The head was born by incision of the parts without even the slightest pain being felt. Thereafter there were good and powerful uterine contractions. During the puerperium there was no sensation either during micturition or defecation, so that these acts took place unconsciously. For the first time on the sixteenth day sensation returned, and also the paralysis of the legs. Thereafter the disturbance of the motor and sensory paths in the lower half of the thorax returned, but the contractions of the uterus remained intact, proving that there exist automatic uterine ganglia.

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TRAUMATIC RUPTURE OF THE URETHRA AND RETROGRADE CATHETERIZATION.*

BY O. S. RUNNELS, A. M., M. D.

Pathological stricture of the urethra is the most prominent surgical ailment of the male sex and may call for the exercise of the gentlest tact and skill or the most heroic intervention. The length of the curved canal in question, the delicate and sponge-like character of its wall, and the many normal openings into it from glands and vesicles situated along its course—all tend, on occasion, to emphasize the difficulties of catheterization and dilatation. Especially is this true when the urethra has been rendered soft and friable by degenerative changes, either acute or chronic; has been narrowed and practically obliterated by one or more strictures or has been made devious and difficult by the encroachments of a hypertrophied prostate. Contractures of the urethra may be due, therefore, to the destructive changes incident to inflammation, either specific or non-specific; to the enlargement of the prostate gland, common to men of advancing age, and to accidental injury at any time of life.

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It is not my purpose to dwell upon the demands made upon the ordinary urethral stricture, or to consider the necessities thrust upon us by foreign bodies around the urethra in the guise of prostatic tumors.

The traumatic phase of the question, however, is territory comparatively new to the profession, inasmuch as little is to be found concerning it in our literature, and it is never or very rarely mentioned in our deliberations.

Because of this dearth of knowledge I desire to contribute a page of experience and thus to draw your attention to an accident by no means uncommon in its happening, beset with immediate and dangerous complications, and requiring prompt surgical treatment.

External violence may be expended upon the urethra in such a manner as to wound and destroy its continuity, cause alarming hemorrhage, and permit such retraction and closure of the ends of the severed urethra as to interfere with micturition. It is then a question of retention of urine, or in the stress of bladder pressure, of the dribbling of urine through the wound. In the area of the urethral tract, its infiltration into the deeper perineal structures, and the establishment of a focus of sepsis. In one case the corpus spongiosum has been mangled instead of severed, and the factors of the problem are the same. In both cases there is a resultant distortion of the urethra in event of healing and the beginning of a long chapter of urinary woes, difficult to describe. The injury may be in the nature of a cut, a bruise, or a division of the urethra, either partial or complete. A longitudinal cut may be a thing of little moment, corrected by time and simple surgical dressing. It is different, however, when the cut is transverse or when the injury has been subcutaneous, when the urethra and vessels have been crushed or severed, and the tissues swell and deform and become infiltrated with blood and urine which, penetrating upward and downward, disorganize the tissues and form lacunæ or pockets into which the necessary catheter is sure to go. At the very beginning, therefore, a condition and not a theory is presented. Only a brief time elapses before relief of bladder is demanded with such urgency as to require action; but how to act, that is the question. The advice to catheterize is mockery, inasmuch as it can be successful only in such cases as are not completely severed. The catheter meets obstruction and, going wide of the mark, returns

with its fenestra choked with blood. Employment of any force will only direct the catheter afield and make a false passage. The fact is, the divided urethra retracts within itself like an inverted glove-finger and effort to get through it, under the circumstances, is futile.

The next suggestion is approach through perineal incision or from the urethral side of the penis, but the endeavor thus to enter the urethra without a staff-guide is a most difficult surgical feat, as anyone will attest who has attempted it. The retracted urethral end, the confused anatomy incident to broken continuity, swelling, and blood-clot, in such loose connective tissue, together with the absence of surgical landmarks, makes the endeavor extremely difficult. A further objection to this method is experienced when necessity arises for a re-introduction of the catheter. The catheter at first introduced must be removed in due time for purposes of cleanliness; and the initial difficulty will be again encountered as effort is made to replace it. It is found that continuity of catheter service must be maintained for as long a time as the demands of the case require. To secure this through the hiatus region of the urethra with its trap-like conditions long existent and to be existent for a considerable time to follow, one must be able to command the urethral situation. The surgeon must be able to remove the catheter and to re-insert it at will, must be able to employ graduated bougies from time to time and must continue these services till the midway union of the broken urethra is complete and the danger of recurrent stricture is past. For a time, therefore, the instrument must be pulled inward rather than pushed inward. There must be safe and sure conduct for the point of the entering catheter or bougie over and through the narrows and pitfalls of the passage, or defeat of effort will follow.

Of course, the dependence upon opium at such a juncture is the Syren's song of deception, and resort to trochar or aspirator is only palliative.

There remains, then, for employment, the only logical procedure: viz., retrograde catheterization. The recitation of a case or two will give body to the question and enable us to sense it more clearly.

Case I. Evidence reported.) A carpenter in falling from scaffold lighted astride a board set edgewise. He gave proof of serious injury by fainting, great suffering, and profuse

urethral hemorrhage. There was no external mark of violence but from the hemorrhage, his inability to micturate, and failure to catheterize, there could have been no doubt as to the nature of his injury. Hot fomentations and opiates eased the patient and the constant dribbling of urine was supposed to insure sufficient urination. Nothing further was done. A few days later he died of uremic poisoning with the ureters swelled to half-inch diameters and the kidneys drowned in their own product. The urethra and corpus spongiosum had been severely injured and the subsequent urethral retraction and contraction, swelling of tissues, and blood-clot, had barred the bladder exit.

Case 2. Mr. P. fell a distance of three feet, alighting astraddle on a narrow scantling. There was profuse urethral hemorrhage and profound shock. No contusion or abrasion, even, was found upon the perineum; the clothing had protected the skin, the impact having been received against the ramus of the pubis. Tumefaction was slight but the perineal sensitiveness and tenesmus of bladder were pronounced. No urine could be passed except by drops after great urgency, and all efforts at catheterization failed. Hot sitz-baths afforded the most relief, and, these being the main reliance, were repeated several times daily. Attempts at catheterization and dilatation were made unsuccessfully time after time by physicians in succession, and he was thoroughly discouraged. Thus for a year and a half the victim expended his time and strength in vainly striving to evacuate the bladder. The drop-method was his only means of urinating and this, while standing fifteen minutes at a time every hour or so through the night as well as the day, for months, became monotonous and intolerable. But for relaxation often secured by the hot sitz-bath he could not have endured.

The persistent and futile use of the bougies of all sizes, both elastic and non-elastic, had resulted in the formation of a labyrinth of false passages that made entrance to the bladder by way of the penis impossible.

He finally drifted into the hands of my friend Dr. H. Coons of Lebanon, Indiana, who promptly referred him to me. Realizing the extraordinary demands of the case, retrograde catheterization was decided upon. Suprapubic cystotomy was accordingly performed and the stricture attacked by the internal route. It was found, however, that the stricture from

direction was also impervious; that the curve of the steel sound conforming to the sub-pubic curve of the urethra would permit passage outward only a certain distance, or just far enough to reach but not to pass the stricture. It was found, further, that the sounds from within outward and from without inward were quite an inch apart at the ends and that the intervening urethra was a dense cicatrix with lumen so narrow and tortuous as to defeat passage through it under any circumstances. Incision was then made on the under side of the penis at the given point, the cicatrix divided, and the ends of the two sounds brought into apposition. The bladder sound was then withdrawn with the expectation that the penis sound would readily follow its fellow into the bladder, but this was a delusion also. The proximal orifice in the cicatricial tissue was closed or retracted and the old sinuses were still present to trap us. Flexible bulb-pointed bougies were next inserted from the two directions and brought into apposition in the sub-penile wound, a soft rubber tube, thirty inches in length, of urethral size, was attached to the ends of the bougies and the latter were withdrawn, thus carrying the tube through the bladder and out at the suprapubic opening, and through the penis and out at the meatus externus, making a continuous drain-pipe from the suprapubic opening via the bladder and the normal channel. Both wounds were now closed with drainage provisions, the suprapubic, having a catheter left in the bladder alongside the rubber tubing which, with one end lying outside on the abdomen tied in a knot, extended onward through bladder and penis, with ten inches of leeway at either end. Small holes were left in the bladder section of the tube for catheter use. After a short time the suprapubic catheter was removed and the wound allowed to close, except for the rubber tube still *in situ* that served by extension to conduct the urine into the vessel upon the floor. Having command of the tubing it could be partly withdrawn in either direction and cleansed daily, as the bladder and penis were injected with boric solution. Having a thoroughly septic condition at the stricture site to begin with, time was required for irrigation while the healing progressed. When the rubber softened and became a focus of sepsis on its own account it was removed while drawing another into its place. And by the same formula and from time to time, flexible dilators in graded sizes were attached and guided

through the hiatus region of the urethra into the bladder, thus securing proper dilatation while the formation of new membrane at the destroyed portion of the urethra was going on. When the healing was sufficiently advanced and the dilatation was safely secured the upper end of the tube was shortened and dropped into the bladder, thus allowing the suprapubic wound to close. The tube was further retained for bladder drainage till assurance of bladder action was satisfactory, whereafter it was withdrawn also.

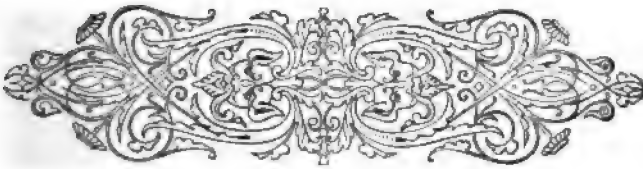
Owing to the long duration and extent of the stricture in this case, frequent dilatation was necessary for months to prevent the re-formation of the stricture. In all protracted cases there should be frequent introduction of sounds for at least a year, and once a month for a long time thereafter, to insure against recurrence of the stricture.

Traumatic injury of the urethra is a very important matter to the general practitioner, for while it is strictly surgical, he is usually the first one upon the scene, and unless well fortified by information upon the subject, may be led to regard certain cases of trifling importance when in reality the demand for expert assistance is very immediate and emphatic. The accident, the hemorrhage, the pain, the swelling, the retention of urine and the inability to catheterize, all tell the story; so that there should be no hesitation in making at once a correct diagnosis. The first hours in every such situation are golden moments. The disaster is to be averted and if quick and satisfactory cure is to be made. For the excretion of urine is going on and this very soon becomes a menace of the first magnitude. The distention of the bladder, the quick decomposition of retained urine, the sepsis entailed by the bladder-leak into a wounded area practically without drainage, and the fatal paralysis of bladder and back-water pressure upon the kidneys are factors in the equation of sepsis and systemic intoxication not to be neglected.

The possible immediate repair of the broken urethra and cure without stricture or septic contaminations is a desideratum greatly to be desired. Instead, therefore, of making suprapubic cystotomy and retrograde catheterization a measure of last resort—when healing by first intention is a thing of the past, when sepsis of the most difficult character has been established in complex anatomy, and when strictures have become established that will require months and years of antagonism

how much more ideal is it, as the Irishman would say, to "take the last step first," and deal with the problem quickly, safely, and effectually?

Entering the bladder from above during the first twenty-four hours you find a bland urine; easy retrograde catheterization or dilatation and the broken urethral ends freshly wounded ready for coaptation, suture, and immediate healing. The progress of the sound outward into the penile wound carries with it the proximal, retracted, glove-finger-end of the urethra, and the incoming sound from the meatus externus performs the same service for the distal end, thus exposing them to plain view, through the sub-penile incision. A continuous suture of catgut or fine silk can then be made to secure the union and the incision closed immediately. A shot-loaded flexible bougie retained in the urethra to make sure of the normal caliber at the site of injury for a few days, and the cure is complete. The wound through the roof of the bladder will close spontaneously or may be closed by suture. The embarrassments of septic contamination having been averted, there is nothing left to be desired. A calamity of the greatest import is thus satisfactorily ended with two short incisions and a week in bed.



SOME ASPECTS OF ABDOMINAL PAIN IN WOMEN

BY W. CASH REED, M. D.

SYLLABUS.

Introduction:

- (1) Pain in General.
 - (2) Pain and Temperament.
 - (3) Pain and Education.
 - (4) Pain as an Index.
 - (5) Pain may be Salutory—Instances.
- Estimation of Pain.
Referred Pain.

Sections:

- (1) Pain Due to Tired and Stretched Muscular Fibrous Structures.
- (2) Rheumatism in Relation to Pelvic Pain.
- (3) Gonorrhea.
- (4) Septic Lesions.
- (5) S.W.† Corner Pain.
- (6) Pain in Abdomen which is not manufactured there.
- (7) Syphilis—Three Cardinal Points.

I propose in the following pages to deal with some aspects of pain in the abdomen in women, with the object of indicating certain general principles, and also of pointing out some pitfalls into which one is liable to fall, if imperfect examination and diagnosis be made. I have found it impossible to deal with the subject of treatment, except incidentally and with the object of knitting together otherwise fragmentary data. The reason lies simply in the fact that the compass of this particular paper does not admit of its consideration to an extent which would be really useful.

The subject of pain is such a vast one, for it is almost as wide as the science of medicine itself, that I should hesitate to include this short paper to deal with it at all were it not that I intend to narrow its limits to quite a small area.

Thus I propose to deal with a few only of the causes of pain which are situated in the female abdomen, though on the subject of pain in the abstract I shall generalize a good deal.

* Read before the Liverpool Branch British Homeopathic Society, and printed also in the British Review.

† "South-West," the region of the appendix, *i. e.*, the right inguinal neighborhood.

As to the cases to be brought to your notice, I have selected such instances as are illustrative from clinical experience entirely of recent date.

Before particularizing, I wish to briefly speak of (1) *Pain in General*, or rather such aspects of it as are forced upon the attention of all medical men sooner or later. As we listen to the patient's tale of woe, the mind falls automatically into an analytical frame, and perhaps equally into a judicial one. Having analyzed the patient's complaint, and selected the chief points of importance from a confused mass of evidence, the latter has again to pass in review with reference to minor points of subsidiary importance. The process of reasoning is exactly opposite to that of the text-book, which labels the disease and then describes its symptoms. This plan has always seemed to me somewhat addling, though I do not presume to say it can be avoided. Perhaps it is necessary; at any rate it is the form of academic teaching of medicine, as distinguished from that of practical teaching. The disease is embodied in the patient who has no difficulty in acting as his or her mouth-piece, and due allowance having been made for irrelevant matter, the listener may now label the disease.

(2) *Temperament*.—No scheme, however, as we all know, can be taken too literally, for the personnel of the narrator must be estimated, and this is no easy task when we see him or her for the first time. If we omit the personal equation we are liable to be hopelessly led astray. Speaking broadly, there are two types of patient which puzzle me the most, viz., the histrionic and the self-centered. They both exaggerate frightfully, but from perfectly different motives, neither of them laudable, but neither actually vicious. The former exaggerates from that state of mind which sees all life in dumb-show, to whom, "All the world's a stage," but they the only "players." There is frequently observed in this class of patient a quick sympathy and a kaleidoscopic change of mental attitude, so that the scene of suffering which they are depicting changes while you look at it. This sympathy sometimes takes the form of self-pity, and the change of mental attitude is due to a sudden sidelight which has shot athwart their vision.

As to the second (the self-centered class), they require more patience. They are those who have an overweening sense of the importance of detail, and who have perhaps been un-

fortunately told that such and such an organ is affected, not the ovaries, sometimes the uterus. Now, "the fat's in the" with these patients. Their minds are overmastered by a particular organ at fault. They have, in short, uterine ovaries "on the brain." The *ipsissima verba* of the doctor have done infinite harm, and the next man has a Herculean task to find another mental objective. It is well to repeat the patient's exact words in reply to your questions. They are sometimes remarkably illuminating. I well remember the mother of a girl, wishing to indicate that the latter was suffering from a cold sensation from the anterior nares to the pharynx, described it thus in Devonshire fashion, "Her nose is like a piece of ice from yur right 'ome to yure." Again, a well-known surgeon of St. Bartholomew's, Mr. Lockwood, described somewhere how a man in the out-patient department described his sufferings as "crampy veins"—this is illuminating in degree. It is, I think, Sir William Bennett who insists on the close relation of so-called cramps and varicose veins, and instances of this at once occur to me, and they will to all.

Pain, from a purely scientific or physiological point of view, I propose scarcely to touch upon, the subject is so vast. I can hardly dismiss this aspect without briefly alluding to pain as an Index of Disease, and pain as an Expression of Intelligence, for in thinking over my paper these two points of view have come conspicuously before me. To take the last first:

(3) *Education*.—In a very interesting book recently published, entitled "Savage Children," by Mr. Dudley Kidd, the following passage occurs. The author is describing the children of one of the South African tribes, and he says, "Savage children are evidently less sensitive to pain than ours, and are strangely slow in locating it. A grown-up Hottentot assured our author that he could well remember suffering from a headache while as yet he had no idea where the pain was, and would have believed anyone who had assured him that it was on the roof of his hut instead of in his head. Naturally, therefore, they are strangely unsympathetic about pain, and the black man declared that as a child, though he had continued to see pain inflicted he did not know what it meant, nor did he realize the significance of a threat until one day when, for the first time, his father struck him." This passage needs

comment, but it indicates a very interesting field for observation anent moral and intellectual culture in relation to the perception of pain.

With regard to pain as an (4) *Index of Disease*, it may be *Salutary* and thus useful, though few of us would admit that the pain of toothache, e. g., was a happy inspiration on the part of Nature for the purpose of commending a special molar to the dentist's delicate attentions! Yet pain may be salutary, as I shall show immediately, although it seems absolutely useless, for it cannot, like electricity, be chained and stored for use in the arts and manufactures. We have yet to invent an instrument, similar to the sphygmometer, which shall record the pangs of the sufferer, and give a tracing of the degree of pain which at a given moment he may be suffering from; otherwise with what mathematical precision we could apportion an anodyne. Such a hypothetical instrument, I submit, might be called an algometer. I believe it was Matthews Duncan who once referred to this subject of measuring pain, but he called his imaginary instrument an odynometer. Is there, then, no standard of pain? In a large section of cases in which the pain is acute, I certainly think there is. There are three cardinal symptoms which indicate severe pain in a given case, whether the patient be histrionic, imaginative, self-centered, or, in short, whatever be his or her temperament; viz., (1) vomiting, (2) feeble pulse, and (3) collapse. Thus we have a tripod of considerable utility in dealing with degrees in acute pain.

To revert, however, to the statement that pain may be salutary. Let me prove it by an instance or two in which its absence as an index may be disastrous. In locomotor ataxia the sensation which indicates a distended bladder may be absent, or markedly diminished, and we have all probably heard of a distressing sequel in such a case. Again, impaired nutrition of a cutaneous surface, as, e. g., by urine in the aged, accompanied by blunted sensations, may and often does lead to bedsores. Thus the intelligence of the nurse must take the place of sensation in the senile, and here many a nurse has found the fulcrum of a lasting reputation. Lastly, injury to a joint enforces rest, and the pain of pleurisy or peritonitis does so also as regards the structures involved, in order to curtail an extension of the inflammatory process.

Another point must be mentioned, viz., the

ESTIMATION OF PAIN.

I have already referred to it when speaking of pain in general, but should like to particularize. I would lay it down as an axiom that in the very young the estimation of pain is almost genuine. I know that a child, e. g., with a tracheotomy inserted, may work itself into a temper from discomfort, annoyance, and general disgust with everything and everybody, including its nurse, though she be the embodiment of every virtue, but this is not pain. A child, however, who complains of what is styled "growing" or "rheumatic" pains can rarely be disregarded, for its plaint very often means tubercle, tubercle, moreover, in a stage which is curable.

REFERRED PAIN.

The subject of referred pain almost demands a paper of its own. That in the knee in hip disease, and in the penis in vesical calculus, and in the testis from calculus in the ureter are all well known. My own recent experience in this class of cases leads me to say a word on two or three instances, which I have found most interesting and instructive. Sciatica is usually associated with uterine flexion; yet it frequently occurs without it. For a flagrant instance, I am indebted to Dr. Hynd of Worcester. He had a case of severe sciatica in a school teacher. The pain had lasted for upwards of a year, when the girl, failing to get relief from her medical man, consulted Dr. Hynd. The latter at once thought it of pelvic origin, and sent the girl to me. The uterus was found to be acutely retroverted, and I decided to give an anesthetic and to rectify matters. This was done at home, and the patient was permanently cured at that moment. Again, sciatica and sarcoma in the pelvis are an infrequent occurrence, fail sometimes to be associated in the practitioner's mind. Yet the connection is so conspicuous that it is infinitely worth while to remember it, and thus to avoid a pitfall. Again, in so-called sciatica we may wisely search for a gluteal abscess due to tubercular bone, where pus has welled through the sciatic notch. Such an observation may be of the greatest utility.

SECTIONS.

Perhaps the commonest form of pelvic pain in women, especially amongst the poor and under-nourished, such, e. g., as form the bulk of our out-patients, is:

(1) *Tired and Stretched Muscles and Fibrous Structures.*—A homely illustration will serve best to illustrate my meaning. I was accustomed when in Plymouth to see women only on Tuesday evenings at the out-patient department of our hospital there. The class of cases I now refer to would put the situation in a nutshell, something after the following formula. To the familiar query, "Well, how are you?" the answer would be, "Oh, I'm very bad to-day, though I was better on Sunday and Monday, but then you see I was washing yesterday, and that never agrees with me." Here is a hint thrown in gratuitously to the soap manufacturers, combine or otherwise, for a telling advertisement. The materials are at hand! The artist "does the rest!" Muscles in women are weak, and after childbirth often subinvolved. The nerves are sensitive, frequently from want of sleep, and this class of case is often anemic. These patients frequently feel quite well in the morning, and fit for the daily arduous round, but after they have been on their feet for a short time the old familiar pain returns. It is referred to the sacral region, frequently between the shoulders, to the hypogastrium and down the thighs. The treatment is obvious, viz., rest, but this is often of course impossible. I used at one time frequently to order these cases a poroplastic jacket, beautifully made by Cockings' representative in Plymouth, and to whom I often send now. But after all, this treatment only meets the case of a comparatively small portion, and is at best a makeshift, though a most comforting one. Perhaps the best is to give these patients a pessary, for it supports the tired and stretched pelvic floor, and this part of the muscular system is the one most urgently needing help. The medicines I have found most useful are arnica and actea, and as a diet, iron.

Closely allied to this first division of my subject is (2) *Rheumatism*, in its relation to pelvic pain, and I shall say a few words in the second place under this head. The late Dr. Ord of St. Thomas's was, I believe, the first who conspicuously insisted upon the fact that chronic rheumatism in women could

frequently be cured by treating catarrhal conditions of the uterus and cervix. Rheumatism is a toxemia, and is frequently absorbed via the throat, as in tonsilitis; by the urethra in the form of the gonorrheal variety, and by the uterine cervix in abrasion and breaches of continuity in that structure. I believe that rheumatism in women is frequently seen clinically in the form of rheumatism of the pelvic ligaments. Two interesting cases were recently in the hospital, and will serve to illustrate what I mean. One is a patient of Dr. Compston's of Crawshawbooth; he asked if anything could safely be done to repair an extremely bad tear in the anterior lip of cervix, extending right up to the floor of the bladder. This tear had occurred in the last confinement. The apex of the tear, I may remark, was extremely sensitive, and when touched caused great pain. Just prior to coming into hospital, Dr. Compston had ordered her to bed on account of some chest lesion, and whilst she was steadily recovering from that, but still in bed, an attack of acute rheumatism occurred. When the patient came to hospital, I stripped the bladder from the deeply torn cervix, repaired the latter and restored the former. It happily turned out a success, though densely cicatricial avascular tissue is not ideal for primary union. Of course the rheumatism may have entered the system by some other channel than the cervix, but I submit that if the cure is now complete, and no other attack of rheumatism occur in this comparatively young woman, there is presumptive evidence that the materies morbi entered via the cervix.

The next case is one in which I do not suggest that rheumatism entered via the cervix. The point here is the pelvic rheumatism *per se*. A little girl, aged thirteen, was distinctly ill. There was constant pain referred to McBurney's point and distinct tenderness there, and a temperature which I had verified during a period of some weeks, while she was an outpatient, of one to two degrees above normal. It may be asked why this child was not at once admitted to hospital as a case of appendicitis. The reason is that she had already been an in-patient under one of our colleagues, who, I believe, after the most careful investigation, could not satisfy himself that true appendicitis existed. When the child was admitted for the second time, I was equally in the dark as to the cause of the pelvic pain. It was not now continuous, and the temperature

had become normal. In order to make a diagnosis in this occult case I now examined her per rectum, under an anesthetic. The uterus was, of course, infantile, and was about the size of a filbert. The right ovary was very easily felt, and was very distinct. It was, in fact, larger than the uterus. The left ovary could not be felt. On examining McBurney's point, the tendon of the psoas muscle felt like a ridge and slipped about backwards and forwards under the finger. With this exception, the evidence in this region was negative. Before passing on to the crucial point of the case, I wish to say, with reference to the examination per rectum, that did the opportunity arise more frequently for examination of a child of this age, I strongly suspect some such want of correspondence in the size of the adnexa would be found more frequently. I submit that here we have a transition in the developmental process which, did we better understand it, would throw light upon that obscure class of case in the adult which we call "infantile uterus."

A week or so after this examination, this little girl's temperature rose, and she had an attack of rheumatism in her left wrist, with—and this is most interesting—a subsidence of the pain in McBurney's point.

(3) *Gonorrhea*.—It would be idle longer to delay reference to what is, after all, by far the commonest cause of pelvic pain in women, viz., gonorrhea. If this could be eliminated, women would be relieved from a thralldom which is simply appalling. All men who work at gynecology, especially in such great cities as this, must frequently be sick at heart at the suffering inflicted upon the innocent by those who enter upon marriage with an incompletely cured gonorrhea. I do not, of course, mean that such a compact is necessarily vicious; it is often a matter of ignorance only. I have no desire to moralize, and leave that to abler and better men in another field. I merely state the impressions of a gynecologist in the slums of a great city. To imply, however, that gonorrhea was more prevalent amongst the poor than the rich, would probably be a hideous injustice.

I saw amongst some old bric-à-brac recently an old oak sideboard, on which was engraved this motto, "Make ready the spindle and shuttle, and God will supply the flax." An apt

antithesis came to mind, namely, "Make ready the speculum and caustic and the Devil will supply the patients."

Before proceeding further to consider pelvic pain due to gonorrhea, it is necessary to generalize a little, or there will be a danger of confusing things which are essentially different, though they may occur in one and the same patient. I refer chiefly to septic pelvic lesions. This is a big subject and I only touch its fringe. When speaking of septic lesions, I mean conditions quite independent of the gonorrheal virus. The mind of a gynecologist is liable to be obsessed by gonorrhea in consequence of its extraordinary prevalence; yet he must sometimes, if I may use the term in this connection, seek to depolarize his mind from gonorrhea altogether. This is specially necessary when dealing with lesions commonly known as septic.

(4) *Septic lesions* of the pelvis are common enough, though I believe far less so than formerly. This, of course, is due to the strides made in teaching practical antiseptic midwifery both to students and midwives. It may provoke a smile to see a student place his hands in a corrosive sublimate solution whilst he slowly counts five. But it's up-to-date science all the same. Probably, too, india-rubber gloves have saved many a woman's cellular tissue from infection, though I am still old-fashioned enough to look upon the latter somewhat in the light of a fetish. Septic lesions of the pelvis are due to trauma, and are dependent upon septic fingers or instruments. The organisms found in these cases are the strepto- or staphylococcus. They are introduced from without and are elaborated within the organism. A well-known red herring is sometimes trailed across the path to confuse the issue, viz., sewer gas. I do not plead immunity from calling in the aid of this malodorous fairy, but it is best to admit at once that in sewer-gas poisoning, which, of course, is well known in the puerperium, one does not find the strepto- nor the staphylococcus, so at least I believe. In pelvic pain due to a resolved pelvic cellulitis and peritonitis, menstruation is excessive, and the pain is very great, and the latter is due to the implication of the peritoneum. In the intervals of menstruation there is a muco-purulent discharge. The treatment is largely surgical, for foci of infection remain in the endometrium, and from these a certain amount of absorption takes place through the lymph channels and is

carried to the adnexa; thus the inflammation is kept up. Therefore, curettage and cauterization and destruction of these foci are indicated.

(5) *Peri-Typhlitis*.—With regard to the subject of pain in the S. W. corner of the abdomen, a citation of the two following cases will be of interest. They serve to emphasize the great importance (when contemplating pain in this region) of not too hastily rushing to the conclusion that it is infallibly due to inflammation of the appendix. I know of nothing which expresses better the attitude of mind which too readily assumes the relation of cause and effect here, than to speak of it as a mind obsessed or besieged. We often speak of a thing being "upon the nerves," and we know exactly what is meant. I think appendicitis is liable to "get on one's nerves," and it needs a level head, a due sense of proportion, and a wise generalization of facts, to give a sound judgment in a given case. I am not, of course, speaking of cases in which operative delay would mean gangrene and abscess, perhaps, in a few hours. In short, all cases of fulminating appendicitis are entirely excluded from these observations. In the cases I am about to refer to, the symptoms were those of appendicitis and which doubtless existed *inter alia*, but as a factor, and though an extremely important one, still only a factor, in the group of signs and symptoms. Miss X., a patient of Dr. Whitaker's, at Waterloo, aged about thirty years, had an attack of perityphlitis last summer when away from home. She was then attended by the practitioner on the spot. The present attack commenced with very severe pains in the abdomen. The temperature fluctuated between 99° and 100°, and the pulse was correspondingly rapid. The bowels were costive, but were not much distended, and the pain was severe in the right groin and thigh, also in left side in region of descending colon. The face was much flushed and the patient was obviously very ill. When asked to locate the pain, the patient placed her hand in the latter region, not over the appendix nor (which was significant to my mind) upon the epigastrium, for so-called "stomach ache" often really spells appendicitis. We examined carefully by the rectum and found a mass which was situated about the middle line, and this was hard and tender. I suggested that we should, contrary to ethics in a single woman, examine per vaginam. This we did, and found that the lump was un-

mistakably a retroflexed uterus. It was painful, especially if in the least tilted, and there was no difficulty in diagnosing a fairly extensive cellular inflammation around it, in other words, a parametritis. Dr. Whitaker took specimens of the blood and then and there estimated with much accuracy the leucocytosis. The count was as follows:

January 8, 1907, at 2 P. M., Leucocytes 18,000.
 " " 10.30 P. M., " 10,660.

Here was a difficulty in view of above rendering, for as is well known a rapid rise in the proportion of phagocytes indicates operation. In view, however, of the totality of the above signs, we decided to wait for twenty-four hours. We continued bell. and merc. cor., and ordered an olive oil injection to be placed in the rectum and retained, and a saline aperient to be given in the morning. The following morning Dr. Whitaker telephoned that there was no need to come as the patient was very greatly better; at 10 o'clock this morning the leucocytes were 12,000, and on the following day at the same hour, 5200. I have not seen her since, but Dr. Whitaker informs me that the recovery, though slow, has been steady, that the parametritis has become more and more circumscribed, and the peritonitic inflammation has disappeared.

The second case in this section which I wish to bring before you is that of a lady, also of about thirty years of age, and who was under the care of Dr. Hynd of Wigan. The history was that of a week or ten days of vomiting, with a temperature that oscillated between 100° and 102° . There was persistent pain in the abdomen, chiefly on the right side. The tongue was almost clean, but the vomiting was so great that the patient could retain merely a little orange juice. The abdomen was tender, bowels not much distended, but over an area of about four inches in diameter in S. W. quarter of abdomen there was a hard, boggy swelling, dull on percussion and very tender to touch. Its outline was fairly obvious above, but below it merged imperceptibly into Scarpa's triangle, leaving the fold corresponding with Poupart's ligament obliterated. The patient looked very ill. The chief cause of suffering was intense pain on defecation; so agonizing was this that the doctor had been obliged to keep the patient under the influence of morphia. Before this was resorted to, her screams alarmed

the whole neighborhood. A rectal examination, verified, as in the last case, by a vaginal one, revealed a diffuse swelling, and, as in the last case, also a retroflexed and tender uterus. This examination was not very thorough, as the patient was so intensely tender. I thought we had to do with a pelvic cellulitis, probably already broken down, but so far not actually pointing in any of the three usual situations, viz., above or below Poupart's ligament, or in buttock through the sciatic notch. I advised the immediate removal of the patient to a private ward, either in the Wigan infirmary or to one in our own hospital, with a view to operation, which it seemed hazardous to delay. The day but one after, she traveled by road from Wigan to Liverpool in a horse ambulance. Contrary to expectation, she did not suffer from transit. The temperature had even sunk and the pulse become lower. The subsequent history I may condense. The phlegmon gradually subsided, the pain on defecation lessened, and pulse and temperature became normal. A week after she could take and digest solid food, and only a very slight swelling then existed. One very curious feature in the case, and which I have not hitherto seen marked to anything like the same extent, was this, whenever the tender swelling in S. W. quarter was percussed or otherwise manipulated, an involuntary contraction of muscular fibers of abdominal wall would set in, very hard and tender. It was sausage-shaped, with the long axis reaching from the middle of Poupart's ligament upwards and outwards in the direction of and beyond McBurney's point. As the internal structures became less sensitive, this contraction became less and less marked, and finally subsided. The patient, I should observe, was also treated by bell. and merc. cor. I have no doubt the case was one essentially of pelvic cellulitis, involving especially the region of rectum and right ovary. The signs and symptoms, however, closely resembled those of appendicitis. I may add that before the patient left the hospital, under an anesthetic it was ascertained that a large and prolapsed right ovary existed.

I shall now refer to two or three matters concerning abdominal pain which have greatly struck me, and which I am anxious to pass on, in case they may be of service to others.

(6) *Pain in Epigastrium which is not manufactured there.*—I wish now to refer to such pitfalls in this connection as in our less experienced days we fell into, and might again unless

forwarned. The most common cause of pain in epigastrium is, of course, some form of gastric disturbance producing hyperesthesia. Gastric mischief, however, of all kinds I am putting entirely out of count at present.

There are four conditions which give rise to pain in the epigastrium which is not manufactured there, and have nothing to do with the stomach: (1) Biliary colic; (2) Appendicitis; (3) Caries of lower dorsal vertebræ; (4) Pleurisy and pneumonia.

As to the first, biliary colic, the subsequent history of the case will clear up any ambiguity.

As to the second, appendicitis, I have learnt never to fail to investigate cases of frequently recurring "stomach ache" in the young, especially in the young adolescent, in the light of possible appendicitis. What happens is this: The patient complains of stomach ache, probably of vomiting also, and on being asked to locate the pain does so definitely in the epigastrium. There may, or may not, be a rise of temperature, probably there is to some degree. By and by this pain subsides, and gives place to the typical pain in S. W. corner of abdomen. Probably in all such cases as I have described there is really pain at both sites, but that in the epigastrium is so much the more severe that it overmasters the other, and it so falls out that as the greater pain subsides the patient for the first time becomes aware of the pain at McBurney's point.

Third, caries of the lower dorsal vertebræ. The fallacy here is so well known that I need do little besides mention the fact in order to make my list complete. The pain is conducted along the course of the spinal nerves from the site of mischief, but is felt where the nerve endings are distributed, another instance of the *puncta dolores* of the older writers.

Fourth, pleurisy and pneumonia. An acute attack of either the one or the other, or a combination of both, is not infrequently associated with very severe pain in the epigastrium. The symptoms are so acute, and the pain so severe and localized, that mistakes have been made on the assumption that the trouble was an acute abdominal one, and the abdomen opened, with, of course, negative result. There are, of course, certain indices which we might suppose would prevent the error. The pulse and temperature failing to give a definite clew, it might be assumed that the character of the respiration

would at least act as an index, yet has failed to do so in the most competent hands. The inference is that in all cases of acute abdominal pain, especially in and about the epigastrium, we ought to make a point of very carefully examining the chest. In such case, to use an Irishism, we may find that the mischief is after all not in the abdomen, but in the thorax.

I am inclined to include another thoracic condition under this head, and to refer to pericarditis. If the latter is associated with diaphragmatic pleurisy, I submit that the pain is largely in the epigastrium. One point, however, I am quite sure of, and that is the very curious one, viz., that pericarditis often induces very severe pain in the right shoulder.

As regards (7) *Syphilis*, a few words must suffice. Experience teaches me that, apart from the outward and visible signs so well recognized of the disease, there is a well-marked triple index of its underlying existence in a case whose primary symptoms are not suggestive of its existence. I am supposing a case in which no obtainable history of syphilis is forthcoming. There is nothing typical in throat or skin, and yet the patient is obscurely ill. I am, of course, excluding cases in which there are para-syphilitic phenomena, e. g., *tabes dorsalis*, or syphilis of brain, in other words, remote or more chronic forms of the disease.

The three points which I have learnt to rely upon chiefly in the diagnosis of cases in which I believe syphilis to be in the background, and yet one cannot demonstrate it until *kali. iod.* has been given, when the effect is often dramatic, are: (1) A temperature of the moderately hectic type; (2) anemia, in which hematinics are useless; and (3) pains, worse at night.



NINETY ABDOMINAL OPERATIONS.

BY WM. S. BYRNE, M. D.

My notes for the past two years record ninety cases and one hundred and five operations. The difference in the stated number of operations and the number of cases is because in several patients more than one procedure was found expedient; for instance, in many cases of pus tubes and ovarian troubles it was found necessary to suspend the uterus or to remove the appendix.

Of my seventeen cases of oöphorectomy it was found necessary to remove both ovaries in four instances; but I make it a rule, if possible, to save one ovary for several reasons, although it is my experience that in a certain proportion of cases when one ovary is removed for gross disease, after a year or two the patient returns with the same trouble on the other side, and puts to one the poser: "Why did you not remove both when you were about it?" It is sometimes very difficult to decide what one ought to do under the circumstances. The abdomen being open, one ovary is manifestly diseased and must be removed, the other is suspicious—it may be cystic or adherent, or some other slight lesion may be present. One has the feeling that if it is left it will cause future trouble, and on the other hand if it is removed all the discomforts of a premature menopause is induced, to say nothing of the mental effect on the patient, who feels aggrieved because she is rendered incapable of bearing children. However, as I have said before, where possible I always leave one ovary or part of one.

Of my five cases of pus tubes, in two both sides were affected; in three, one.

As a rule, supracervical amputation of the uterus is not a very difficult operation, but the little more one has to do in complete removal of the uterus makes all the difference. I find the greatest difficulty arises, after tying off the uterine arteries, in cutting cleanly through the vaginal walls. Consequently, I now always commence the operation in the vagina, opening into the peritoneum through the cul-de-sac, and separating the bladder from the uterus in front as far as possible. This procedure renders the future steps of the operation

through the abdomen more easy than a purely abdominal hysterectomy.

In sixteen hysterectomy cases, six were complete and ten supracervical or subtotal.

We do not now see very often those huge ovarian cysts that were so common fifteen or twenty years ago; only one of my cases answered to that description, and one was a dermoid.

In the series of ninety cases there were three deaths, and although we learn more from our failures than our successes, I must admit I am pleased that even at the expense of increased knowledge my mortality rate has been so small. In the large majority of patients recovery was uneventful and presented no points of interest, but in a few various complications arose which are worthy of special mention.

A most interesting and instructive case was that of the patient on whom I performed complete hysterectomy, and who died on the seventh day after operation. She was a woman of sixty-three years of age, and had suffered from uterine cancer for twelve months. After operation there was evidently a great deal of shock, and the usual remedies were employed, as well as saline infusions under the breasts and into the rectum. On the following day there was some distention, and surgical emphysema was detected, extending from the wound out to the crest of the ileum on the right side. On the third day the patient had quite recovered from the shock, and in response to an enema passed a large quantity of flatus. There had been the usual vomiting up to this time, but it was not excessive; the distention was confined to the upper part of the abdomen, was very soft, but the pulse rate was giving me some anxiety—114 to 128. On the fourth day, as no movement of the bowels had occurred, purgatives were begun, and many drugs were tried in turn for the next few days, but without any effect. Small quantities of brown fluid were vomited continually. Fifth day, vomiting everything; distention soft; pulse rate 88-100, temperature 99.6°; sleeping on and off all day. Sixth day, vomiting still going on; distention confined to upper half of abdomen, soft and not very great; pulse rate 84, temperature 98.8°.

The matter was urgent, and I felt that if only I could get the bowels to act the patient would recover. As the woman was evidently dying from obstruction of some kind, although

the vomiting had never been anything like stercoraceous, and as her pulse rate was so good, I felt that an effort should be made to relieve the bowel condition. I was in great doubt as to the cause. If mechanical obstruction existed it was difficult to explain the absence of stercoraceous vomiting, the slow pulse and small distention; but if there was no mechanical obstruction, why could we not get the bowels to act? On the second day, flatus in large quantity had been passed, showing that at that time at all events the *prima viæ* was clear. I got Dr. Wilson to give the patient a small quantity of chloroform and rapidly reopened the abdomen, but could not find in a hurried search any strangulation, so I opened a piece of distended bowel, stitched it to the skin, and closed up the wound. Only a small quantity of flatus passed up to the moment of death, which took place fourteen hours later. At the autopsy the pelvic wound was found completely healed; there was no evidence of any peritonitis. I traced the bowel from the rectum up to the pylorus without finding any mechanical obstruction whatever. The colon and two feet of the ileum beyond the cecum was collapsed, but at that point the distention began. The line of demarcation between collapsed and distended bowel was most evident, but there was no mechanical cause. The air could be pushed along from the distended portion into the collapsed without difficulty, and evidently the cause of the vomiting, obstruction, and death was intestinal paralysis. I have always been more or less skeptical as to paresis of the intestine being enough to cause such obstruction, but this case is an object lesson. The line of obstruction was marked and definite, but the cause was not mechanical.

The second death occurred quite suddenly on the tenth day after gastro-enterostomy in a woman of fifty-three. The patient was seen by me that morning, and had been making a normal recovery, was taking soft foods, fish, bread and butter, and such like. In the afternoon she got a sudden heart attack, and died in five minutes. From the relatives I found that for some time she had been suffering from faintings and heart attacks.

The third death occurred five days after an attempt had been made to close a deep fecal fistula. A stinking abscess was found deep down in the pelvis, and a gauze drain was inserted,

but septic peritonitis supervened. This was the only case of the whole series in which a drain was used.

Severe shock after operation took place in two cases—one was in the case of complete hysterectomy just mentioned, the other was in a patient from whom a large ovarian tumor had been removed. No pulse could be felt for several hours; the temperature was subnormal and the condition was very grave for two days, after which improvement was rapid.

I have mentioned one case of grave intestinal paralysis with a fatal issue; let me instance another, which fortunately recovered. I removed two very large pus tubes from a woman of thirty-one years of age. The adhesions to bowel were very extensive, and during the process of breaking them down, one tube ruptured. There was a large extent of raw surface left after removal, which was covered over as far as possible with omentum and the operation finished without drainage. There was a good deal of distention for eight days, and there was on two occasions on the second day a large vomit of black fluid. The bowels were most difficult to get going, but on the fourth day action took place. For three weeks there was great trouble with the constipation—distention, which lasted more or less all the time, would suddenly become excessive, the temperature would rise, and, as the ward sister said, we would have a regular “picnic” to get an evacuation. The patient went out of hospital with a certain amount of distention, and I have seen her several times since. It only gradually subsided, but her health has been very good.

In one instance, whilst removing a large pyosalpinx, I found the pus extending into the wall and cavity of the uterus, and consequently I performed hysterectomy. Recovery was without incident. This was the second time I had seen such a condition.

On another occasion I was engaged in dilating the cervical canal in a patient of forty years of age, and was using Hegar's dilators for the purpose. There was a good deal of difficulty in getting each one past the internal os, but after passing a number eight they seemed to pass too easily. On examining carefully I found a rent in the side of the uterus about the internal os, and I was quite certain I had entered the peritoneal cavity. I passed a sound through the opening several inches, and felt its point on the abdominal surface. After sterilizing

the skin I opened the abdomen and examined, but not a trace of an injury could be seen. I then knew I must have passed the dilators through the uterine side and between the layers of the broad ligament. On tying off the ovarian artery and opening up the ligament I found my surmise was correct, so I amputated the uterus at the line of the tear and completed the operation in the usual manner. I have seen the uterus perforated by a dilator on two occasions, and the treatment adopted, in my opinion, was correct in such instances, that is, to get at the organ and sew up the tear, but in my case this course was impossible; and had I not performed hysterectomy the patient would have certainly developed an abscess in the broad ligament and would have had, if she had the good fortune to get well, a long and tedious illness. As it was, the patient made an uninterrupted recovery.

As an instance of a mistake I made, and which shows that even when an abdomen is open how errors in diagnosis can creep in, I mention the following: A woman had had, some months previous to consulting me, an Alexander Adams operation done for retroversion, but was not relieved of any of her symptoms. Her medical attendant had told her that the uterus had slipped back again, and on examining her I found it had done so. She agreed to have ventro-suspension performed, but urged me, unless it was an absolute necessity, not to remove either ovary; one had seemed large when I examined her. At the operation I found the uterus, as I thought, both retroverted and flexed, and one ovary enlarged and suspicious. I finished the suspension without doing anything else. Some three months after she came complaining of the same symptoms, pain in the side, dragging, backache, and all the usual accompaniments. Although the uterus was apparently in position, yet it could be felt in the cul-de-sac, and the previously suspicious ovary was now large and painful. This time she gave me permission to do as I liked, for she wanted to be well. On opening the abdomen for the second time I found an enlarged and cystic ovary, which I removed, and at the back of the uterus a fibroid about the size of a small mandarin orange. This was evidently the cause of her retroversion, and it was easily shelled out and the cut edges sewn over. She has since been relieved of all her symptoms. I cannot explain how it was I missed the tumor the first time, and I confess my error

in the hope that the knowledge that a fibroid may be confounded with a retroversion will prevent a similar mistake being made by others.

One case of oöphorectomy was interesting, for the reason that the pain complained of was on the opposite side to the lesion.

In one case, after removal of both ovaries and tubes for pyosalpinx from a woman of thirty-four years of age, menstruation was absent for six months, and the patient had all the symptoms of the menopause. At the end of that time the menses became re-established, and have lasted regularly ever since, now a period of twelve months.

In one case of subtotal hysterectomy, menstruation has continued at irregular intervals. The latter case may be explained by the theory that some portion of the endometrium may have been left behind, but it is difficult to account for the former one. The condition, however, is not uncommon, for this is the third case I have seen, and many cases of the kind have been reported.

As a rule, operations for the removal of an unruptured tubal gestation are simple and devoid of interest, but the following does not fall into that category. A patient who was sent to me had been ill for some three months, suffering from irregular menstruation, slight floodings, and it was supposed that she had had a miscarriage. On examination, I found a tumor in right fornix, extending as far as the back of the uterus. I kept her in bed for a few days, and found that her temperature curve varied between 99.6° and 100.4° . I had arranged to open the abdomen in a few days, but one morning early she had a sudden pain, the temperature went up to 101.4° , and the pulse rate to 128. Within an hour I operated and found the tumor buried in a mass of bowel adhesion, and consisting of the right tube, containing a two months' pregnancy. The appendix was enlarged, thickened, and buried in the mass, the bowel kinked in two places, the surfaces joined by decomposed and dirty-looking lymph, which extended over the whole right pelvis. The appendix and gestation sac was removed, the bowel freed from its adhesions and straightened, the adhering lymph wiped and cut off as far as possible, and where the bowel wall was thinned a few stitches were inserted. A large raw surface was left over the posterior part of the uterus, which was covered

with omentum and the abdomen closed without drainage. Evidently the gestation was comparatively old, and local peritonitis had been present for some time.

The case of rupture of intestine was as follows: A man, whilst driving, collided with another vehicle, and the shaft perforated his abdomen just above Poupart's ligament on the right side. Intestine at once protruded, which was pushed back by handkerchiefs at the moment, and he was removed to a private hospital, where he was at once etherized. On examination there was found a ragged wound, bruised and torn, into which a fist could be inserted. The intestine, which protruded, was torn, and at once was sewn over with Lembert's suture, and I pulled down another couple of feet and sewed up some smaller tears. The wound was cleaned and made as aseptic as possible, and the worst that occurred was a small abscess beneath the skin, which left a troublesome sinus, but which healed in about three months.

Although the following case does not belong to this series, it is instructive and worth relating. A patient was operated on about three years ago for procidentia uteri, the perineum being repaired, the cervix amputated at the level of the internal os, and a ventro-suspension performed. The result was excellent. Three months later she became pregnant, and five months later she consulted me. I was puzzled as to the best course to pursue, for I was fearful that if I allowed her to go on to full time the scar tissue would give way during parturition, and rupture of the uterus would take place. After a few days' consideration I advised labor to be induced at once, but she would not consent at the time. Three months later she consented, and I brought on a miscarriage. Labor seemed to progress naturally, but when the fetus came through the os she complained of severe pain, and I feared rupture had occurred. I examined carefully, but failed to discover any lesion, and for two days thought my fears were groundless. On the third day she developed septic peritonitis, and on examining with speculum and sound I found a small tear extending up the side of the uterus and into the peritoneal cavity. It is easy to be wise after the event. The course I should adopt in a similar case in the future would be this: I should allow the patient to go on to the full time, and then perform Cæsarean section. The books are full of descriptions of how to do an amputation of the cer-

vix, but all are silent as to the course to be pursued in case of pregnancy occurring afterwards.

The appendix was removed between the attacks, and no operation was undertaken during the acute stage, except when an abscess had formed, and then it was simply opened and drained. The practice advocated by some surgeons, of operating during an acute attack, not only of what is called fulminating or perforative appendicitis, but in almost every case, is, in my opinion, bad practice and bad surgery.

In thirty years' general practice I have not seen any of those cases in which death occurs within, say, forty-eight hours from gangrenous or perforative appendicitis. I do not say that such cases do not occur, but they must be rare. On the other hand, I know of several cases operated upon during the acute stage with a fatal result. If an abscess is in process of development or only commencing, the peritoneum may be trusted to wall it off and it can be opened later on with safety, and if an abscess does not form the appendix can be removed when the attack is over.

I fancy that more fatal results have occurred through performing appendectomy during the acute stage than have ever happened through perforative or gangrenous appendicitis *per se*.

As you will have remarked, no fatalities occurred from septic troubles, and it may be worth while spending a few moments while I mention a few details of the care taken to prevent the occurrence of such a misfortune. Regarding myself, I never touch put or anything likely to contaminate my hands without wearing gloves. For a clear abdominal case I always work with bare hands, but if I have to do any vaginal work prior to opening the abdomen, I always wear gloves for the preliminary part. I have seen some surgeons adopt the opposite principle, wearing gloves for clean work and bare hands for the infectious, which seems to me to be quite wrong; others wear gloves for all work, which may possibly be safer, but personally I never feel absolutely comfortable when doing a difficult abdominal operation when cumbered with gloves. In pus cases, if one's hands become infected, one never knows when they will be clean again, even with all the washing and chemical antiseptics one may use. I always change into a complete sterilized suit, shirt, trousers, shoes, and cap before entering the operating room. I trust far more to washing one's hands with

soap and sterile water, changed two or three times during the washing, than to any chemical antiseptics, though I always prior to beginning operating, as a final safeguard, rinse freely in a 1-2000 biniodide in spirit solution, washing it off with sterile water.

The nurses always get ample time to sterilize their hands in the same way, and unless they have a separate room to do this necessary preparation in, they are very often tempted to hurry over the process and to neglect perfect asepsis. Sterilized basins, sterilized nailbrushes, and towels are rigorously insisted on. The nurses also remove all their outer garments, wear a sterilized operating gown, and a cap which covers all their hair, and also take the same precautions regarding pus cases as I do myself.

The catheter is passed in every instance prior to the patient's being brought into the operating room. Subcutaneous injection of 1-200 gr. of atropine is given at the same time that the catheter is passed, and 1-40 gr. of salicylate of eserine immediately after operation. After an extended trial of this treatment I am inclined to think there is less trouble with the bowels than formerly. An enema on the morning following the operation usually acts well.

I always tie the uterine and ovarian arteries with linen thread. Silk I have long since discarded, and I have seen fatal hemorrhage occur after ligaturing those comparatively large vessels with catgut. I have never seen any trouble arise from linen ligatures in the abdominal cavity.

In performing suspensions or fixations of the uterus I use catgut for the peritoneal surface, and then insert a silkworm-gut stitch through skin, fascia, muscle, and uterus, which is removed on the tenth day. I had so much after trouble with buried linen sutures, through the uterus and peritoneum, that I have given up the practice. I always tie bleeding points as I go along. If one puts on pressure forceps and leaves them to the last there is the danger that hemorrhage may be checked for the time and break out when the wound is closed. Besides, a number of forceps are always in the way, and confusion arises later on as to which are on bleeding points and which on something else, and I must say if bleeding is going to occur I like to see it, and not to cover it up.

In performing hysterectomy, I cut the uterine artery, and

when it spurts it is caught in forceps and ligatured with linen. The practice of tying up a large lump of tissue, including the artery, I look on with apprehension, as the ureter is likely to be included.

The preparation of the patient has to be intrusted to the nurse. On the night previous to operation, which usually takes place at 8.30 the following morning, the patient is shaved and has a warm bath. Two hours previous to operation the nurse in charge of the operating room sterilizes her hands, puts on a sterilized gown and with sterile water in a boiled basin, scrubs the abdomen with a sterilized gauze sponge and ethereal soap for three minutes. The operation area is then washed with ether and again scrubbed with another sterilized gauze sponge, ethereal soap, and sterile water for three minutes. Then it is washed over with rectified spirit, and a pad of sterilized gauze soaked in 1-1000 biniodide in water is applied, and a sterilized binder pinned over to keep the pad in place. When on the table, one of the nurses removes binder and pad, and immediately before making the incision the area is washed over with the biniodide solution and washed off with spirit. Nailbrushes for preparing the abdomen have been discarded, as it was found that the skin epithelium was in some instances rubbed off, and a dermatitis resulted from too vigorous rubbing.

In all cases the vagina is prepared, as one never knows when it may be entered from above. It is douched with 1-4000 corrosive solution, scrubbed with a gauze swab wet with ethereal soap and sterilized water, and again irrigated and dried with a sterile swab.

Catgut ligatures are prepared as follows: It is presumed that hands, jars, and water will be first absolutely sterilized, then the gut is washed in soap and water, soaked in ether for twenty-four hours, then placed in another jar of ether for twenty-four hours, after which it is stored in biniodide and spirit for a fortnight, when it is ready for use. Gut prepared in this manner is very satisfactory, and will keep for months.

Just before an operation the gut is taken from the biniodide solution and soaked in pure spirit. Kangaroo tendon is prepared in the same manner, but requires a longer time to render it safe. Linen and silkworm gut are boiled for two hours and stored in rectified spirit. Gauze sponges are used exclusively and are made in two sizes—large flat ones for use in the ab-

dominal cavity, and smaller round ones for swabbing. The larger sizes have twelve inches of tape attached, so that loss in the cavity is improbable. I find that for ordinary operation six small sponges and two large ones are ample, so that this number is sterilized and kept in glass jars, labelled and signed by the nurse who prepares them. The sterilization is carried out as follows; The sponges are counted and placed in the jar unstoppered; jar, sponges, and stopper are placed in a special sterilizer made for the purpose, and boiled for two hours, after which the water from the jar is poured away and replaced by a sterilized carbolic solution, 1-80, and sealed up. You will remark that the sponges are not touched by the hands from the moment they are first placed in the jar. No more and no less are stored in each jar, so that counting at the end of the operation is easy and no mistakes can occur. The practice of using dabs, i. e., small pieces of gauze unmade and of various sizes, for swabbing the external wound, needs only to be mentioned to be condemned.

All instruments, including scissors and knives, are boiled; the cutting instruments require sharpening fairly often, but this is a minor matter for the assurance of perfect safety, and of course all instruments are counted. The abdominal wound is closed in layers with catgut, and sustaining sutures of silkworm gut passed through the skin and fascia, the wound covered with dry sterile gauze, which is not touched till the eighth day, when the silkworm-gut stitches are removed.

The abdominal cavity is never flushed out, dry swabs are used to clear away any soiling, and drains are seldom or never employed. Without perfect asepsis great success in surgical work is impossible, and to gain this one has to depend on the operating room nursing staff.



SOME POINTS ON PERINEAL AND VAGINAL TEARS.*

BY FREDERICK FENTON, M. D.

It is not my intention to treat this subject in a systematic or exhaustive manner, but simply to present for consideration two or three points which have impressed themselves upon me.

First as to the causes of lacerations:

Under this heading one must of course mention such things as large head, rigid soft parts, and precipitate labor, but these are not the only or most frequent causes of tearing, in its severe forms at any rate. Undue prolongation of the second stage is, I believe, more apt to result in severe tearing of vagina and perineum, than is the opposite condition, viz., precipitate labor.

Sufficient weight has not been given to this matter, and women are allowed to drag through weary hours of pain, resulting not only in greater exhaustion of the patient, but increasing the prospects of severe tearing and bruising, with all their possibilities for harm enhanced, by virtue of the lowered vitality of the pelvic tissues and diminished local resistance. A second stage should very seldom exceed three hours, while more frequently a much shorter time is indicated.

This raises the question as to when the second stage begins. Our text-books tell us that the complete dilatation of the cervix marks the division between the first and second stages of labor. Generally speaking that is true, but it is not in the ordinary case that we have trouble with tears, nor is it in the ordinary case that it becomes of great importance to fix with any degree of definiteness, just when the second stage began. Very frequently in prolonged cases, hours after the membranes have ruptured, the cervix is still not completely dilated, and yet the patient may be suffering, or in danger of suffering from the same kinds of ill effects as are seen in prolonged second stage. Manifestly then, we cannot take complete dilatation as the only or principal guide in this matter.

In conditions of abnormal position or presentation, one of the most frequent of the general signs is early rupture of the membranes, and these are the very cases which furnish us with pro-

* Read before the Toronto Medical Society.

longed second stages, or what I believe should be so regarded and treated.

I therefore, submit that, from the standpoint of treatment given a patient in labor with incompletely dilated cervix, the beginning of the second stage should generally be counted from the time of rupture of the membranes, and this is imperative if it is found that liq. amnii escapes during the "pains." The escape of liq. amnii during the pains, as you are all aware, means that the presenting part does not properly plug the uterine outlet, so that instead of corking it the more tightly during a contraction, as is normally the case, there is left a gap at some point of its circumference, where the "water" is forced out and thereby more or less rapidly drained away.

The result of loss of "waters" is to allow the uterus to grasp the fetus more and more closely with each recurring contraction, and permit retraction to gradually fit its muscular wall into the contour of the child's body. The circular fibers of the uterus will now tend to prevent the advance of the fetus, thereby opposing the action of the longitudinal fibers, and the effects of delayed labor in the second stage, with all their attendant evils rapidly developed.

Furthermore, while contraction of the uterine muscle is intermittent, retraction is constant and progressive, with the result that the fundus gradually becomes thicker and thicker at the expense of the lower uterine segment.

The lower uterine segment is passive during labor, its fibers relaxing with the contraction of those of the body and fundus, till finally it is little more than a connecting tube between the body of the uterus and the vagina, which in turn is attached to the pelvic outlet. With the retraction of the muscle, especially where there is obstruction to the onward passage of the fetal head, and consequent delay, the lower uterine segment and vagina become practically a hollow tendon serving to connect the uterus with the pelvic outlet. As retraction progresses the "tendon" becomes more and more tense and less readily dilatable. Secretion of the vaginal mucus is apt to fail, and the dry and sticky mucous membrane clings to the presenting part.

The head normally passes through the pelvis in a rolling manner. The occiput first descending, while the sinciput remains fixed; marked flexion is produced, and internal rotation occurring, the presenting part is brought below the arch of

the pubes, while the sinciput is still high in the pelvis. Flexion now ceases and a process of extension begins, whereby the occiput swings forward under the pubic arch and presents at the vulval orifice, the sinciput at the same time sweeping down the posterior vaginal wall and distending the perineum.

With a tense dry mucous membrane, which clings to the extending head, it is only reasonable to expect that the injury to soft parts will be greater than would be the case with the mucous membrane relaxed and moist. Hence I contend that prolonged second stage is a very potent factor in the production of pelvic injuries. I need only refer to the increased danger to the child which pertains in these cases to still further emphasize the necessity for reasonably early interference.

It does not come within the bounds of this paper to discuss the various conditions causing delay in labor, nor to treat of the signs of undue prolongation of the second stage, matters with which all here are more or less familiar; but I want to say that with careful and intelligent management of a case of labor, the text-book signs of prolonged labor should seldom if ever be seen; we should anticipate them, by affording relief at a sufficiently early time.

In spite of all that one can do to prevent it, tears are bound to occur at times, and I view with distrust the man who "never has a tear." I suspect that either he has not examined his patients' genital tracts with sufficient care or that his physical or moral eyesight is bad. "Threes into twos will not go." Muscular and connective tissues will not stretch indefinitely no matter who happens to be standing by the bedside. At the same time, in our early days of practice, we have all had tears occur, which would not occur now under similar conditions of head and soft parts, for the reason that we have learned by experience how some at least may be avoided. By the use of chloroform during the second stage, especially as the outlet is being neared; by the maintenance of good flexion; by the crowding of the head forward against the pubic arch, and tucking of the anterior vulvar commissure over the occiput as the head is being delivered, a great deal can be done. Episiotomy has not met with general favor, though I am confident I have seen it successful in preventing a severe tear on a number of occasions.

These methods of preventing perineal tears and the perform-

ance of episiotomy are familiar to all, and as I have nothing new to offer I will not waste your time by further remarks thereon, but will pass to the consideration of one or two points regarding the repair of tears after they have taken place.

Doubtless many of you have had similar experiences to my own in finding fairly deep tears, showing every indication of uniting by first intention, at the end of a few days, where no suturing has been done at all, nature apparently handling the case satisfactorily. One naturally asks the question, to what extent may we leave these things to nature? The risk undertaken for the purpose of stitching perineal and vaginal tears is so infinitesimal, while the consequences of failure to secure a good pelvic floor are often so disastrous to health and happiness, that I feel that one is not justified in leaving a damaged pelvic floor unstitched.

The time at which these repairs are best done is deserving of some little consideration. It is the practice of most physicians to proceed with the stitching of the perineum, etc., as soon after the delivery of the placenta as possible. There is room for improvement here, I think.

Pelvic and perineal injuries may be divided into two great classes, viz., those which are severe, and those which are not. I would call a tear which involves a vaginal wall to a greater extent than would necessarily be torn by a tear of the perineum, or a tear of the perineum, which involves the sphincter, as a severe one, and I would advocate that severe lacerations be left for one or two days before being stitched, while those which are not severe should be done before the placenta is expelled, and while the patient is still drunk with the chloroform administered throughout or toward the termination of the second stage of labor.

Slight lacerations are stitched for the purpose of closing a possible channel of infection, and possibly, too, from one's natural desire to leave things as nearly as he can in as good a condition as he found them. Slight tears, as I have defined them, do not in any way weaken the pelvic floor, so that it makes little difference whether one succeeds in getting everything just in the place it belongs or not, hence difficulties of light, etc., are of no great moment. It is my practice in stitching slight tears to insert the sutures before the placenta is expelled, for two principal reasons. First, because the patient is

still sufficiently under the anesthetic that she will not feel it, and secondly, because so long as the placenta is still attached there will be little if any bleeding to obscure the field of operations. The sutures are not tied till the placenta is expelled, and the wound thoroughly cleansed. Furthermore, by the time the placenta has come away, ordinarily the patient will have recovered from her anesthetic, and the bruised and torn tissues will to a large extent have recovered from the local anesthesia due to stretching, while if you give more chloroform after the expulsion of the placenta, one is very apt to have troublesome and even dangerous hemorrhage.

There are several reasons for delaying the repair of severe tears for at least twenty-four hours, and even much longer periods are not objectionable. In the first place the conditions obtaining after a labor, as a rule, are such as to make the maintenance of asepsis almost impossible, outside of a well-equipped hospital. Time must be allowed for the removal of soiled materials and the fresh preparation of patient, nurse, doctor, instruments, etc., and oftentimes sleep is an indispensable part of the preparation of the three former.

The majority of these cases occur at night, and it is seldom possible to get a really satisfactory light to illumine the vagina, while next day one can choose his time and place with due regard to light, etc. Again, the swelling and distortion of the soft parts immediately post-partum is such that it is very difficult at times to make out just what one is dealing with, and there is danger of stitching things where they do not belong, while the constant leaking of blood over the field of operation increases all these difficulties manifold.

On the other hand by delay many of these difficulties are completely removed, while others are rendered much less formidable. Much needed rest may be secured by all concerned, thereby lessening the danger of shock to the patient, and improving the physician's judgment and skill.

The cleansing of the patient and preparation of sterile solutions and dressings, and the thoroughly efficient sterilization of instruments are all matters worthy of delay, while the securing of good light may make the difference between success and failure. But there is another matter which I believe is of great importance. During labor and throughout the puerperium the uterine muscle not only contracts but retracts also.

Contraction produces temporary shortening of the muscle fibers, but retraction produces permanent shortening. In the early days of the puerperium this retraction goes on at a rapid rate, the uterine cavity becoming thereby much reduced in size, permanently. The result is that under the influence of chloroform the relaxation of the uterine muscle is not of so much consequence as it would have been a day or two before, when the relaxation might have permitted greater opening of the uterine sinuses and consequent hemorrhage of more severe type.

The objection has been raised by some that non-union may more frequently occur. All I can say is that I have never found such the case, and those who have adopted this method, and have had experience with it, do not hesitate to wait one or more days if they so desire. I have stitched as late as the seventh day after labor, and on the fifth day repeatedly, with good results, and it has been unnecessary to do anything more to freshen the surfaces, than to rub them with gauze.

I would deprecate the use of douches after perineal or vaginal tears, and I believe that the habit of tying the knees together is most objectionable, in that it must interfere very seriously with drainage from the vagina and maintenance of thorough cleanliness of the external genitals, to say nothing of the irksomeness of the position to the patient.

The perineal muscles have nothing to do with the thighs, nor has any thigh muscle any connection with the perineum, and I can see no reason therefore to believe that any movement of the legs can in any way affect the tension of the perineum. In stitching bad tears we usually have our patients in the lithotomy position, which would certainly put tension on the perineal tissues if such could be done by the position of the legs. Having brought the surfaces of the tear into apposition with the patient in such a position (which would increase tension if any would), no posture which is comfortable to the patient can, I am sure, be in any way detrimental.

I should not go into details regarding the method of stitching, but I will mention just one point, and that is that great care must be observed that no pockets are left. The one that is most frequently overlooked occurs in the "Y" shaped tear, in which the main stem of the "Y" represents the tear through the perineum, while the two upper limbs run up either side of the vagina. It is important to see that the tip of the tongue-

like piece between the two upper branches of the tear, is included in the second or third perineal suture, and thus drawn down into position.

I realize that in private practice one must at times be guided by expediency, even at the expense of efficiency, but where it becomes a question of a sound pelvic floor, half-measures should not be considered. I have yet to meet with the first objection to the course advised, where the case has been fairly stated to the patient and friends.



HYOSCINE-MORPHINE OR "SCOPOLAMINE-MORPHINE" FOR SURGICAL AND OBSTETRICAL ANESTHESIA.

BY EMORY LANPHEAR, M. D., PH. D., LL. D.,

Formerly Professor of Operative Surgery in the Kansas City Medical College and
Professor of Surgery in the St. Louis College of Physicians and Surgeons.

In the May, 1906, number of the JOURNAL OF SURGERY, OBSTETRICS, AND GYNECOLOGY there appears an article on scopolamine-morphine anesthesia by Dr. J. W. Hassler, Consulting Anesthetist to the Metropolitan and the Hahemann Hospitals of New York, in which he reports his experience in 24 cases (scopolamine being used alone in some and in combination with morphine in others) 38 requiring chloroform in large quantities; 11 developing alarming symptoms; with bad vomiting in nearly all instances. He refers to 26 deaths in Europe and one in America (to which I am able to add 2 from anuria in the practice of Dr. G. M. Phillips and 1 in that of Dr. J. C. Murphy, both of St. Louis). His conclusion is that the drug is uncertain in quality and therefore dangerous—which is unqualifiedly true. He also asserts correctly that the United States Pharmacopeia states that scopolamine hydrobromide is the same as hyoscine hydrobromide—which is *not* true so far as the preparations upon the market are concerned.

Commercial scopolamine is generally impure and unsafe for anesthesia; but there is obtainable an absolutely pure hyoscine hydrobromide which seems to be perfectly safe and which (unlike scopolamine) gives an ideal anesthesia when used properly.

What is the difference between scopolamine and hyoscine as obtainable to-day? Hyoscine is made from *hyoscyamus niger*; is a hypnotic of great power; is safe in milligram doses every hour three times; it has a uniform optical rotation of minus twenty degrees; and the pure drug is easily obtainable (from the right people). Scopolamine is an alkaloid derived from *scopolia atropoides*—*scopolia Japonica*; is identical in chemical formula with hyoscine *when pure*; is often either unreliable or unsafe on account of the presence of atropine or apoatropine; has an optical rotation varying from -20° to as low as -2° ; and costs only about one-third as much as hyoscine.

These are assertions which H. C. Wood, *Junior*, cannot disprove—because they are *facts*.

If Dr. Hassler will obtain tablets made by Dr. W. C. Abbott, of Chicago, from absolutely pure hyoscine hydrobromide and use them (as I have in nearly 400 capital operations, without a particle of trouble) I am sure he will become infatuated with the anesthesia.

The formula finally decided upon by Dr. Abbott and myself, after much experimentation, is

Hyoscine hydrobromide.....	gr. 1-100
Morphine hydrobromide.....	gr. 1-4
Cactin (from <i>cactus grandiflorus</i>).....	gr. 1-67

For huge operations: One tablet is injected three hours before, a second one and a half hours before, and a third a few minutes before incision. For work of less magnitude: One tablet is injected two hours before and a second a half hour before operation, and a few drops of chloroform by inhalation, or a little cocaine or beta eucaine locally for the skin-incision. For minor cases: A single tablet is injected a half hour before operation and the work completed under cocaine or chloride of ethyl local anesthesia.

Among the operations I have performed under what is known in the West as the "Abbott-Lanphear anesthesia" are: gastrectomy, trephining, excision of the chest-wall, hysterectomy, removal of the superior maxilla, nephrectomy, amputation of the thigh, excision of rectum, ablation of cancerous breast, etc., etc. When a surgeon does this without any evidence of suffering on the part of the patient, without shock, without post-operative pain, without vomiting and particu-

larly without dread of operation on the part of the patient can anyone say the method is without merit, merely on the condemnation of men with academic not practical experience like H. C. Wood, *Junior*?

Now let me compare my experiences, in nearly ten times as many cases, with those of Dr. Hassler, in the order of his conclusions:

1. Is it harmless? The impure scopolamine is unquestionably dangerous for the production of surgical anesthesia. Pure hyoscine in the combination advised appears to be perfectly safe: my experience covers practically all operations in surgery (excepting the eye—and it is not useful in ophthalmic work), nearly 400 cases; and Dr. Abbott has reports of more than 1000 others, without a single serious symptom. This, of course, is not conclusive, but by the end of 1907 my friends and Dr. Abbott's will have used it more than 10,000 times if all the tablets sold are used; then we shall have something definite. But even in 1500 cases there should have been some fatalities if the pure hyoscine-morphine-cactin combination were as dangerous (or the same thing as) scopolamine-morphine.

2. Does it, as an adjuvant, necessitate the giving of less of a general anesthetic? Dr. Hassler found that the scopolamine he used required much chloroform. About one-third of my patients have had to have a few drops of chloroform—usually about half a dram for a two or three hours' operation. Three only have required large quantities.

3. Is the stage of excitement less when it is given as a preliminary to chloroform? When three doses are given, usually no chloroform is needed at all—hence there is no "stage of excitement." When chloroform is to be given if the patient is permitted to become perfectly tranquil upon the table (he is usually asleep after two doses) there is absolutely no "stage of excitement" from chloroform, as a rule; *but ether should not be used*—it causes intense agitation in many instances. One only, of my series, showed any great excitement on inhaling chloroform.

4. Is the sleep natural? Dr. Hassler found his patients in a condition like coma. Mine seem to be merely in a deep sleep—almost like hypnotic sleep: they can usually be roused easily by shaking or sharp command; I have my patients sit up some-

times to permit better application of bandages: certainly a condition not resembling coma. And in most cases (even after three full doses) the patients are awake in a few hours, free from pain or discomfort, and chatting pleasantly with friends or attendants.

5. Is there less nausea and vomiting? From scopolamine (plus the large amount of chloroform used) Dr. Hassler had a great deal of vomiting. Nausea is almost invariably absent in my cases; vomiting has occurred but twice in a year's work. My patients generally get plenty of water in a few hours and next day after operation are often found eating as if nothing had occurred—a strange and happy contrast to the fearful thirst and hunger of the days of chloroform and ether.

6. Is the slow respiration natural? In deep, natural slumber the respirations sink as low as 10 or even 8 per minute. Six per minute (my lowest record in this anesthesia) is not alarming as long as the face is red, not purple; if it become cyanosed the patient may be readily aroused and made to take a few full breaths. After their return to bed fat patients may have to be turned on their sides to prevent dropping of the tongue into the pharynx.

7. Is there much diminution of mucus? There is in most instances considerable dryness of tongue and fauces which disappears in a few hours.

Of his objections to scopolamine only one applies to this pure hyoscine combination.

1. Variety of action: It is almost uniformly effective when given properly and when the surgeon understands that he must occasionally stop for an instant and speak reassuringly to the patient—a delay which seldom does harm since the analgesia lasts for hours; or a few drops of chloroform may be given from time to time when special structures, like the parietal peritoneum or the broad ligaments, are to be pulled upon.

2. Variability in reaction. It is true that some few patients sleep many hours, but most awaken soon after return to bed, and all can be roused from time to time as desired. But—a beautiful thing—the analgesia persists for so many hours that post-operative pain has been practically eliminated from my work.

3. Vaso-dilatation with excessive hemorrhage. This has been totally absent in all of my surgical cases; nor do women

delivered in this anesthesia bleed any more than other normal confinements.

In conclusion I can only advise those who have not tried this new anesthetic to get some tablets, use just one an hour before operation under chloroform and see how little general anesthetic will be required and how little nausea and pain will follow. After a few trials thus, try two tablets (an hour and a half apart) before chloroform, and finally use the full anesthesia after the *modus operandi* is well observed.

The proper method of its use in labor is of interest; but cannot be described in this article, already too long. Labor can be rendered almost free from pain and the most difficult obstetric operations performed without any anesthetist other than the operator. I shall be glad to send reprint descriptive of the method to any doctor interested in the matter.



ECTOPIC GESTATION.

BY B. G. THOMAS, M. D.

An issue of the *Journal of Obstetrics and Gynecology of the British Empire*, is devoted to a series of articles on extra-uterine pregnancy. The first article, by Drs. J. K. Kelly and A. L. McIlroy, discusses ovarian pregnancy, and describes a case. The authors suggest that, while the occurrence of blood cysts of the ovary is common, the specimens are not often carefully examined for products of pregnancy, and that the frequency of occurrence of ovarian pregnancy could be easily determined if a few pathologists were each to examine a series of cases of blood cysts of the ovary. In their own case the pregnancy was a very early one, and hemorrhage sufficient to destroy the ovum might occur at even an earlier period, and give rise to only a small follicular collection of blood suggestive merely of a hemorrhagic follicle. After briefly describing the cases previously recorded, the authors describe in some detail their own case. Here the patient was a woman thirty-three years of age, who had been married twelve years, and given birth to five children, the youngest two and one-half years old. The patient's last menstrual period had been about thirteen

weeks before admission, and six weeks after the period she had been suddenly seized with severe pain in both iliac regions, and had had a shivering fit. On the following day menstruation began and lasted four days, and hemorrhages had continued after this to occur at irregular intervals. On admission to hospital the diagnosis made on the physical condition and on the history was of extrauterine gestation. At the operation a blood cyst was found in connection with the left ovary of about the size of a large victoria plum. The adnexa of the right side were normal. Some months later a minute examination of the specimen was made in order to decide whether it should be kept for the museum. Upon a microscopical examination chorionic villi were found in the blood-clot, and a complete investigation of the whole ovary was entered upon.

The following points were made clear by the investigation: (1) The whole ovisac was completely composed of ovarian tissue. (2) The pregnancy had occurred within a Graafian follicle, as was proved by the presence of lutein cell tissue almost directly adjoining the fetal epiblastic structures but separated from it by a layer of fibrin and connective tissue, thus showing the connective tissue as the normal tissue for the embedding of the ovum, whether intrauterine or extrauterine. (3) No rupture had taken place in the blood mass, but the point of least resistance was found at the lower thinned-out portion, where the pressure of the blood mass had been greatest. (4) The fact that no decidual-cell elements were found negatives the statement that pregnancy can take place only on tissue which has undergone some previous genetic influence. (5) The Fallopian tube was normal. (6) It was apparent that the pregnancy had originated within the ovary. Ovarian tissue entirely surrounded the fetal structures, and the fact that there had been no break in the continuity of the walls and the lutein-cell envelope showed that the ovum had become fertilized while within its Graafian follicle.

In the next article Dr. Haultain brings out the following points: (1) The difficulty of diagnosis of extrauterine gestation from the irregularity of the signs and symptoms; (2) the frequency with which ectopic pregnancy is simulated by other conditions; (3) the ease with which it may be mistaken for an ordinary abortion and the necessity for thorough pelvic examination in all such cases; (4) lastly, but most urgently, the

absolute necessity for removal as soon as even a probable diagnosis has been made.

The irregularity of occurrence of the typical signs and symptoms of the condition is shown by the fact that in the 23 cases under the author's observation amenorrhea was absent in 5 cases, irregular hemorrhage was absent in 4, pelvic pain or discomfort was absent in 4, shedding of the decidua was absent in 16.

As regards differential diagnosis, the author considers only the record of mistakes in his own experience. Cases operated upon on a mistaken diagnosis of ectopic gestation were a case of dermoid ovarian cyst with a ruptured vein in the pedicle, one of simple unilocular ovarian cyst associated with pregnancy, and one of ovarian abscess with salpingitis, while a fourth case described is one diagnosed as incarcerated fibromyoma, in which at the operation a large blood sac inclosing an atrophied ovum was found; two other cases which were at one period mistaken for ectopic gestation but which were not operated upon have also come under the author's notice, one which proved to be a bicornuate uterus with intrauterine pregnancy, the other an intrauterine pregnancy combined with intestinal obstruction due to accumulated feces. In support of the necessity of removal of the gestation sac it is pointed out that early operation is usually easy and safe and removes all chance of further trouble, while to temporize is to expose the patient to definite risks of suppuration, continued growth of the gestation, and recurrent severe hemorrhage. Should an operation be finally necessary, it has frequently become one of the utmost difficulty.

The association of extrauterine gestation with uterine fibromyomata is discussed by Dr. F. E. Taylor. Uterine myomata are of interest in connection with extrauterine gestation first, because the two conditions may simulate one another and the diagnosis be a matter of great importance as well as of difficulty, and, secondly, because myomata occurring in the cornu, fundus, or upper part of the body of the uterus seem to have a special tendency to obstruct the lumen of the interstitial part of the tube and so to conduce to the production of tubal gestation; it is possible that the rarity of the combination of the two abnormalities is due to the fact that myomata are usually conducive to sterility. The author gives accounts of the cases

of extrauterine gestation combined with the presence of myomata described in the literature, and in addition gives the clinical history of a case which came under his own observation. The points of special interest in his case are that the symmetrical enlargement of the uterus due to the presence of the myoma suggested the diagnosis of simultaneous intra-uterine and extrauterine pregnancy, and that the position of the myoma, which was mesially situated in the fundus, was such as to cause obstruction to the uterine end of each tube. In some of the other recorded cases the position of the myoma is definitely shown to be such that it obstructed the uterine end of the pregnant tube.

An article on the diagnosis of early extrauterine pregnancy is contributed by Dr. W. A. Milligan. The subject is divided under the following heads: (1) what the patient tells (a) in her own words, (b) in answer to more minute inquiry; (2) what may be expected to be found on examination (3) the most likely things that may be confused with an extrauterine pregnancy. The symptom for which advice is sought is almost certain to be pain; an interesting point is that the pain may possibly be referred entirely to the act of micturition. In addition to the history of pain the patient frequently reports an irregularity in menstruation. The more minute inquiries with respect to the paan are important, as a correct interpretation of the symptoms often leads to a right diagnosis. Hemorrhage may often be differentiated from that of an ordinary period by the color of the blood, which in ectopic gestation is often dark, almost blackish, by the persistence of the hemorrhage, and by the presence of membrane or pieces of membrane. A history of having "never missed a period" is not to be taken as excluding the diagnosis of ectopic gestation. If no period has been missed the point to elicit is whether the bleeding that has come on with the pain is like that of an ordinary period, and, if not, in what the difference lies. Among the conditions which may be confused with extrauterine pregnancy are: (1) Intrauterine pregnancy; in one of the author's cases a patient with all the symptoms of extrauterine gestation, and with, on examination, the feeling of a soft swelling not apparently incorporated with the uterus, yet proved to have an intrauterine pregnancy, and gave birth to a healthy child after a normal labor. (2) Retroversion of the gravid uterus; here the chief

points to be relied upon for diagnosis are the urinary symptoms and the bimanual examination. (3) Inflammatory and other acute abdominal processes: (a) Cases of pyosalpinx often present difficulties of diagnosis, but the temperature chart, the pulse, and the pain generally afford pretty definite evidence; (b) cases of cellulitis, more especially when there has recently been an incomplete abortion; in such cases there are in favor of the diagnosis of an inflammatory condition, the temperature changes, the pulse rate, and the tenderness on examination; (c) appendicitis; (d) rupture of an abdominal viscus into the peritoneal cavity; (e) intestinal obstruction. Among tumors, (a) ovarian tumors, especially small ovarian tumors with twisted pedicles, ovarian tumors accompanied by intrauterine pregnancy, and ovarian tumors occurring along with an incomplete intrauterine abortion; (b) fibromyoma and fibrocystic tumors; (c) hematocele; (d) hematoma; (e) hematosalpinx.



A THOUSAND CONSECUTIVE CASES OF ABDOMINAL SURGERY.

BY JAMES SWAIN, M. D.

In the haste of modern life there is a danger of finding little time to read and less to think; yet it behooves us to review periodically our methods, or we may fall behind the progress of the age and deceive ourselves with a false sense of efficiency.

Although abdominal surgery covers a wide field, there is little room for "specialism," for the surgeon who opens an abdomen should be prepared to treat whatever condition he may find present; and you may gather some idea of the nature and frequency of the various conditions more commonly met with when you know that my series of cases includes 101 operations on the ovaries and tubes, 75 on the uterus and broad ligaments, 127 operations for hernia, 229 for appendicitis, 49 operations for diseases of the liver, gall bladder, and bile ducts, 65 operations on the kidney, 126 operations for diseases of the stomach and intestines (excluding hernia and appendicitis), 29 operations on the urinary bladder and prostate, and 24 operations for tuberculous peritonitis and peritoneal adhesions.

We can analyze these figures when speaking of some of these operations later, but there are certain general consideration which must first be discussed, though it should be borne in mind that I am dealing solely with such methods as I have thought it best to adopt, and I do not propose to give you an account of the many ways and means that others may prefer.

It must be remembered that the chief source of infection of wounds is the skin of the operator and his assistants on the one hand and that of the patient on the other; and as all methods of disinfection are easily likely to fail, it is desirable that great attention should be given to this point. The hands should be scrubbed with a sterile nail-brush for five minutes in frequent changes of hot water and soap, and afterwards immersed for at least two minutes in a 1 in 500 solution of biniodide of mercury, with 70 per cent. alcohol, as recommended by Lockwood. This solution can be allowed to dry on the hands, or a dry sterile cloth can be used, and rubber

gloves (previously sterilized) are then put on. It is true that rubber gloves diminish tactile sense, but the feeling of security and the additional safeguard against sepsis which they furnish more than counterbalance the slight inconvenience entailed by their use. The skin of the patient is often prepared some hours before operation. After being shaved, it is treated with turpentine, ether, and soap and water, and then covered with a weak antiseptic dressing; but, just before operation, it should be covered with a cloth wet with the alcoholic biniodide solution already referred to. As soon as the incision in the skin is made, a further protection against the possibility of infection from the skin of the patient is afforded by clipping the edge of a large sheet (which covers the patient except for a hole opposite the operation area) to the sides of the wound.

Consistently with freedom of manipulation, all abdominal incisions should be as short as possible—in appendicitis it is rarely necessary for it to extend much above two inches in length. In operating on the lateral parts of the abdomen, where the incision goes through a muscular area, the method of McBurney, in which the muscular fibers are separated bluntly and not divided, should always be adopted if possible. If this form of incision is used in cases of appendicitis, ventral hernia can scarcely follow, provided that no suppuration occurs. In operating in the middle line the tissues are best divided by raising them on two pairs of forceps, and cutting between them. The interval between the two recti is sought—one or other sheath being opened—and the peritoneum then incised between two forceps, as already mentioned. McBurney's incision is closed in layers; but incisions in the mid-line are closed by stitches of silkworm gut, taking in all the tissues on either side, and supplemented by a few superficial intervening stitches for the more complete approximation of the skin. I do not believe it to be necessary to adopt any of the more recent complicated incisions for opening the abdomen in or near the mid-line, nor do I think it necessary, as a rule, to suture such wounds in layers. The prevention of ventral hernia following abdominal incisions is best secured by keeping the incision as short as possible, avoiding undue tension on the stitches, and by the attainment of union by "first intention." If these conditions obtain, it matters little what form of incision or suturing is adopted; and in support of the

efficiency of the simple methods suggested it may be noted that in the period covered by this series of cases there were only seven operations for ventral herniæ of all kinds, including those that followed suppurative appendicitis and other conditions which are known to favor the occurrence of hernia.

Marine sponges have been discarded in favor of swabs of dry sterile gauze, but no swab is placed in the abdominal cavity unless it has a long tape attached to it in order that it may be easily found and removed.

Boiled silk or cellulose thread is used inside the peritoneal cavity, the former for the suture of intestine, the latter for ligatures of vessels, etc. The finest cellulose thread is not fine enough for intestinal work, though it bears boiling better and is less bulky than silk for other purposes. Catgut, though theoretically better, is less reliable.

Irrigation of the abdomen has been practically abandoned, except in some cases of ruptured intestine, perforated gastric ulcer, or other condition leading to extensive fouling of the peritoneum. When resorted to, the incisions should be free, so that the process may be thoroughly carried out in all parts of the abdominal cavity; and, if necessary for this purpose, the intestines should be turned out into warm cloths. Unless done with assiduous care, irrigation may be productive of more harm than good, and I well remember cases of suppurative appendicitis that were lost when "flushing the abdomen" was in vogue, that might have been saved by the adoption of the present treatment of dry sponging.

In non-suppurative cases, just before the last stitch is tied at the end of the operation, I frequently put two or three pints of hot normal saline solution into the abdomen, and leave it there to be absorbed. It certainly prevents much of the thirst from which most cases of abdominal operation suffer, and I am inclined to think it diminishes pain.

Superficial (skin) stitches are removed at the end of a week, but deep stitches are left for a fortnight or longer. In all cases where the incision has been more than two inches in length, the patient is advised to wear an abdominal belt and pad for six months to a year.

The discussion of the diagnosis of abdominal diseases is too extensive for my present purpose; but before dealing with the different groups of operations I should like to remind you

that many acute abdominal conditions commence in much the same way, and thus may lead to some difficulty in diagnosis at the beginning of the mischief. Thus, vomiting in association with pain and collopse is found in almost every case of acute abdominal crisis, whatever the cause of the attack may be—appendicitis, perforated gastric ulcer, a twisted ovarian pedicle, and numerous other conditions, are all characterized in the early stage by this trial of symptoms, for which Treves suggested the term “peritonism.” Under such circumstances, however, we have not to wait long, as a rule, before the localization of pain and tenderness lead to a sufficient diagnosis of the case for the purposes of treatment. If the vomiting is produced by one of the many forms of intestinal obstruction, the retracted and rigid abdomen of the commencement of the attack is soon replaced by a gradually increasing abdominal distention; and the same is true of many cases of perforative peritonitis. It is not desirable to wait for this abdominal distention in cases where the diagnosis is clear; and I have always found it to be a safe surgical practice to open the abdomen without delay in cases of doubtful diagnosis where the vomiting is associated with a gradually increasing tympanites. All rules, however, have their exceptions, and notably in the case of obstruction due to intussusception meteorism is generally absent; but the diagnosis of many of these cases is made sufficiently evident by the existence of a tumor, which hardens under the hand, in association with attacks of pain and the passage of bloody mucus.

Operations on the Ovaries and Fallopian Tubes.

To turn to the various operations, we take first those on the ovaries and fallopian tubes. Of these there were 101, namely 56 cases of ovarine adenocystoma and parovarian cyst, and 45 cases of solid ovarian tumor and disease of the fallopian tubes requiring salpingo-oöphorectomy. In 6 cases the ovarian adenocystoma was double, once the cyst was ruptured, as the result of a fall, in the case of a young lady in whom no previous disease was suspected, two of the tumors were of the nature of “dermoids” and one of these “dermoids” was associated with an ovarian adenocystoma of the same (left) side. This case was only fifteen years of age, and it is remarkable that I had previously removed an ovarian adenocys-

toma from the sister of this patient at twenty years of age. One case of adenocystoma was associated with a milky fluid in each breast, though there were no other signs of pregnancy, and another produced so much intra-abdominal pressure that the uterus was extruded.

Attacks of pain and vomiting, especially if accompanied by collapse, in association with ovarian cysts, are frequently dependent upon twisting of the pedicle. Such symptoms are of serious import, for unless relief is speedily afforded by operation death from peritonitis may follow. In fact, the occurrence of peritonitis in connection with an ovarian adenocystoma should always be regarded as dangerous, and operative interference should be instituted without delay.

Four of the cases proved to be adenocracinomata of the ovary, and one was a papilloma which infiltrated the deeper tissues. It is advisable to submit all cases to microscopical examination, for, as Kelly says, it is desirable to regard all ovarian tumors as malignant until removed and proved otherwise. Rapid growth and the presence of a blood-stained peritoneal fluid are always suggestive of malignancy.

Solid tumors (fibromata) of the ovary are usually characterized by free mobility. They often cause an amount of pain which is quite disproportionate to the size of the tumor, and may be associated with some peritoneal effusion, both probably due to the twisting of the pedicle.

On the subject of ovariectomy I merely wish to remind you that it is desirable to put a second ligature on the stump after the tumor has been removed. Though some operators do not consider it necessary, I invariably put a double ligature on all structures in the abdomen and pelvis that have been ligatured before being cut away, the second ligature being applied after the division of the tissues.

The cases treated by salpingo-oöphorectomy include chronic inflammatory conditions of the fallopian tube and ovary, abscess of tube and ovary, or both, and tuberculous disease. The operation was frequently bilateral, and sometimes associated with appendicectomy.

The performance of salpingo-oöphorectomy in cases of chronic tubal and ovarian inflammation, pyosalpinx, and other allied conditions is often one of great difficulty from the complexity of adhesions: and there are few abdominal operations

requiring greater judgment in deciding on the need for operation, and in dealing with the difficulties of its performance, than those associated with tubo-ovarian inflammation. Many cases of pus formation in tubes and ovaries are due to gonorrheal infection, or to a streptococcal infection after parturition or abortion; but the baneful effect of appendicitis upon the female generative organs is perhaps not so fully recognized as its importance deserves. From the appendix the *bacillus coli communis* may easily travel to the ovary and tube and produce abscesses or chronic inflammatory cysts in the broad ligament. In some acute cases of tubal and ovarian abscess the abscess may burst into the vagina, rectum, or bladder, and the patient may spontaneously recover. In other cases it may burst into the general peritoneal cavity, and is then best treated by abdomino-vaginal drainage, which has a large field of application in "pelvic abscess" in the female, whether the abscess is a result of a burst tubo-ovarian abscess, appendicitis, or other cause; and in cases where an abdominal section discloses the existence of an extensive abscess deeply burrowing among the pelvic viscera, I cannot speak too highly of its value. Whether abdomino-vaginal drainage is adopted or not, the body of the patient should be raised in all cases associated with a widespread septic peritonitis, for by this means there is a tendency for the inflammation to be confined to the pelvis, where its effects are less serious than when the upper part of the peritoneal cavity is affected. I do not wish you to suppose that every case of abscess of the tube and ovary is treated by abdominal section and enucleation. Some are better treated by vaginal incision, but of these I am not now speaking, nor do I wish you to suppose that every case of chronic inflammation of ovary and tube requires the operation of salpingo-oöphorectomy. We must in the more chronic cases be guided by the severity and frequency of the attacks of pelvic inflammation which the condition causes; for though it is not desirable to perform salpingo-oöphorectomy in all cases of chronic inflammation of the tubes, we must remember that, as in appendicitis, the attacks tend to recur as long as the focus of mischief remains in the abdomen.

Operations on the Uterus and Broad Ligaments.

Of the 75 operations on the uterus and broad ligaments, there were 33 hysteromyomectomies and 14 myomectomies for uterine myofibroma, 10 hysterectomies for carcinoma of the uterus, 7 cases of hysteropexy, 3 of ruptured tubal pregnancy, and 7 cases of cystic, and 1 of solid, tumor of the broad ligaments.

Although Noble has shown that about 16 per cent. of women having fibroid tumors would die if not operated on because of the degenerations and complications arising in the tumor or in the uterus, I do not advise the removal of all myofibromatous tumors of the uterus, as I think more lives will be saved by a judicious selection of cases for operation.

Before considering the indications for operation it is desirable to point out that a great deal of misunderstanding exists as regards the influence of the menopause on myofibromata; women are so often led to suppose that when once the "change of life" occurs all their troubles will cease, and much valuable time is thus often lost by relying upon a false hope. Not only is the menopause often delayed for some eight or ten years at least, but in many cases the tumor grows more rapidly at the time when it is usually supposed that a diminution in size may be expected.

The mere size of the tumor may, under certain circumstances, afford a sufficient indication for operative interference. A comfortable existence is scarcely possible in many of these cases, and though in the more wealthy classes a life of chronic invalidism may be preferred, in others, where a necessary wage-earning capacity is seriously interfered with, an operation is desirable. Hemorrhage is one of the commonest symptoms of myofibromata, and is also one of the most important indications for operation, on account of the insidious way in which the patient's health and strength are gradually undermined by its repetition. If the hemorrhage is not amenable to curettage, or other simple means, operation should be advised when the patient ceases to regain in the intervals the loss of strength incidental to the excessive flow at the periods. Delay means further prostration, and jeopardizes the successful result of the removal of the tumor. The development of pain in a case which has hitherto caused no trouble, or any marked

increase of pain, generally indicates the necessity of a radical operation; and a rapid enlargement of the tumor, especially if associated with pain, may almost certainly be regarded as demanding operative treatment, for such symptoms are usually indicative of serious degenerative changes in the tumor itself. Further indications for operation are afforded by pressure effects of the tumor on the bladder, rectum, sacral nerves, and other structures, some of the worst symptoms being produced by the smaller tumors incarcerated in the pelvis, and prevented from expansion upwards by the sacral prominence.

Myomectomy is the operation of choice in young women, provided that the general condition is fairly satisfactory, that the tumor does not extend much above the umbilicus, and that there are no important complications, such as severe inflammatory disease of the tubes and ovaries or advanced anemia. Within proper limits this operation of shelling out the tumor should always be adopted, as by this means the functional activity of the uterus is unimpaired. In cases where myomectomy is undesirable I prefer the operation of retroperitoneal hysteromyomectomy rather than the so-called panhystero-myomectomy. When the myofibroma is associated with malignant disease, nothing short of the removal of the whole uterus and tumor would be advisable; whereas, in ordinary uncomplicated cases of hystero-myomectomy, I can see no reason for the excision of any more of the uterus and tumor than is included in the supravaginal operation of retroperitoneal hysteromyomectomy. Though the last-mentioned operation is regarded as the method of election, the complete removal of the uterus is sometimes preferable for various reasons at the time of operation, and of the 33 hystero-myomectomies for myofibroma, the whole uterus ("panhystero-myomectomy") was removed five times.

The operation of hysterectomy for cancer is very unsatisfactory in its remote results. Of the 10 cases here recorded, 2 are known to be free from recurrence at a period of more than three years since operation, 2 others remain free at rather less than two years since operation, 4 are known to have recurred, 1 died soon after operation, and 1 was lost sight of and the result is unknown. Good results are obtainable in cases that come early, but there is a great amount of ignorance amongst women as regards the early symptoms of

carcinoma of the uterus, and this, combined with the natural insidiousness of the disease, determines the fact that in about four cases out of five we have to decline a radical operation. For cases diagnosed early, I believe that colpo-hysterectomy is the best operation, and nine of the ten cases were so treated. Abdominal hysterectomy offers certain advantages—we can cut more widely of the disease, and the sacral glands can be removed, bringing the operation into line with operations for cancer in other parts of the body; but practically the results are not so good as in cases of colpo-hysterectomy, where the primary mortality and incidence of recurrence are distinctly lower. We must be selective, for though colpo-hysterectomy is the best for early cases, there are others for which abdominal hysterectomy is more suitable, though at present it seems undesirable to adopt this latter operation as the routine procedure.

Little need be said of the comparatively simple operation of abdominal hysteropexy, which was performed in most cases for painful retroflexion uncontrollable by ordinary means. I prefer the abdominal route, because it enables the surgeon to deal with the adhesions that are not infrequently present.

Broad ligament tumors are fixed, more or less closely applied to the side of the uterus, and sessile because of their situation between the layers of the broad ligament. Seven were cystic and one was solid (myofibroma). Cysts are found in the mesosalpinx—that is, encapsuled between the two layers of the broad ligament which form a mesentery for the fallopian tube above the level of the ovary. Fibromata and myofibromata have a capsul derived from the mesometrium—formed by the layers of the broad ligament below the level of the ovary. In the right understanding of the various anatomical forms of capsule lies the secret of conservative surgery of the uterine appendages. The capsule is opened and the tumor is shelled out of its connective tissue bed, and thus ovary and fallopian tube can be preserved intact. It is quite wrong to perform salpingo-oöphorectomy in such cases.

Operations on Liver and Bile Ducts.

Of the 49 operations upon the liver, gall bladder, and bile ducts, there were 3 cases of hepatotomy—1 for hydatid disease and 3 for abscess; 3 cases of hepatopexy; 26 cases of cholecys-

totomy, of which 18 were for gall stones; 9 cases of choledocholithotomy, in one of which it was necessary to open the duodenum to extract the stone from the ampulla of Vater; 1 case of cystocotomy for gall stones; 2 cases of cholecystenterostomy; and 4 cases of cholecystectomy, 1 of which was for malignant disease of the gall bladder in association with gall stones.

You will see how large a proportion of these cases is associated with the existence of gall stones, and to this subject I must chiefly confine my remarks. It may be helpful to tabulate some of the chief points which are worth noting in association with the gall bladder and its ducts: (1) A painless enlargement of the gall bladder without jaundice suggests catarrhal cholecystitis. (2) A painful enlargement of the gall bladder without jaundice suggests an "empyema" of the gall bladder; but it must be borne in mind that a suppurative cholecystitis may exist without a palpable swelling, as a gall bladder which has been repeatedly inflamed may not be capable of much distention. (3) A painless swelling of the gall bladder with jaundice is in favor of an obstruction of the common duct by a tumor (malignant). (4) Remittent jaundice, generally without an enlarged gall bladder, accompanied by chills and pain, occurs with stone in the common duct. (5) Jaundice is a less common symptom in cholelithiasis than is usually supposed. Kehr says it is absent in 80 per cent. of cases.

The differential diagnosis of three conditions associated with jaundice—stone in the common duct, pressure on the duct from tumors (malignant disease), and chronic pancreatitis—is beset with considerable difficulty, so that it is necessary at times to advocate an exploratory incision for the purpose of clearing up the matter.

When one sees the late results of gall stones—such as empyema, cholangitis, perforation, and impaction of stones in the choledochus, all of which are associated with a high rate of mortality, the surgeon is justified in his anxiety to operate while the gall stones are in the gall bladder, when the mortality is very slow. By this suggestion of early operation, it is not to be understood that I am advocating operation in every case of gall stones. In mild and infrequent attacks of cholecystitis, the question of operation would scarcely arise; but if the gall

bladder is enlarged, an operation should be recommended, though the case may be otherwise of a mild type. Even with frequent and severe attacks of colic associated with the passage of small calculi, an operation is unnecessary so long as the stones continue to pass. Operation is indicated if the frequent attacks of colic cease to be attended with the expulsion of calculi. In acute obstruction of the common duct, operations should not be performed, as such cases not infrequently get well under expectant treatment. If, however, the jaundice persists for some five or six weeks, or if symptoms of cholangitis—as shown by rigors, intermittent fever, etc.—supervene, operation is desirable. In old patients, and those suffering from organic disease of the heart, lungs, or kidneys, operation is rarely justifiable, and should only be undertaken on account of the development of some grave condition associated with the gall stones. On the other hand, operation should be advocated in cases of severe colic, incapacitating the patient from the necessary duties of life. In all cases of enlarged gall bladder, whether painful or not, and whether accompanied by jaundice or not, operation is the safest course to pursue. The occurrence of acute diffuse peritonitis in the neighborhood of the gall bladder requires immediate operation, for it may be associated with acute phlegmonous inflammation of the gall bladder, or perforation of the gall bladder or ducts.

I am not persuaded of the desirability of performing cholecystectomy as a routine measure in the operative treatment of cholelithiasis, as advocated by many surgeons. Recurrence of gall stones after operation can, I think, rarely occur—I have not yet met with such a case—and if they did recur, it is preferable that they should do so in the gall bladder rather than in the common duct. I do not, therefore, think that the argument in favor of cholecystectomy as a prevention of recurrence of gall stones is a strong one. The wounds, however, heal more rapidly than in ordinary cases of cholecystotomy; and if it can be shown that the mortality is less, it will doubtless be the operation of the future in suitable cases. At present I have not performed cholecystectomy except for carcinoma of the gall bladder, permanent blocking of the cystic duct, and in an atrophic gall bladder which could not easily be dealt with in any other way.

Operations on the Kidney.

Of the 65 operations on the kidney there were 28 cases of nephropexy for movable kidney, 19 cases of nephrotomy, 7 of nephrolithotomy, 10 of nephrectomy, and 1 of operation for ruptured kidney. I only wish to speak now of nephropexy for movable kidney, for in this I think it possible that the surgical pendulum has swung too far, and a more careful discrimination of cases suitable for operation is necessary. Many cases of pathological mobility of the kidney give rise to no symptoms whatever, and of those that do give rise to symptoms distinctly referable to the renal mobility, probably at least two-thirds are better treated by some form of belt than by operative fixation. In all cases, except, perhaps, those associated with some form of kidney degeneration, a belt should be tried, and in many cases of movable kidney, accompanied by hysterical and neurasthenic symptoms, a belt is the only justifiable form of treatment. It is in cases of movable kidney in association with displacement of other organs (splanchnoptosis) that neurasthenic and hysterical symptoms are common, and then there is a double cause of a possible failure of the cure of the symptoms by operative procedure, which is most often very unsatisfactory in these cases.

In general terms, it may be stated that nephropexy is more likely to relieve painful symptoms than nervous phenomena. The need for operation is the urgency of the case. When belts fail operative measures are indicated in healthy adults in whom a freely mobile kidney is associated with symptoms of gastric crises or of torsion of the renal vessels. Under such circumstances operation may be undertaken with every hope of a satisfactory result. The occurrence of hydronephrosis with movable kidney may be regarded as necessitating surgical interference. Hydronephrosis implies kidney degeneration, and the condition tends to get worse the longer operation is delayed. The presence, however, of such degenerative changes renders operation more dangerous.

Operations for Hernia.

Of the 127 operations for hernia, 40 were strangulated and 87 were "radical cures" deliberately undertaken without the presence of strangulation. Of the strangulated hernia 17 were

inguinal—1 of which had eighteen inches of gangrenous gut; 19 were femoral—2 of which were "Richter's hernia"; and 4 were umbilical. Of the "radical cures," 69 were inguinal—4 of which were double, and 1 contained an ovary; 6 were femoral; 5 were umbilical, and 7 were ventral herniæ.

The operation of radical cure of hernia is so safe—not one of the 87 cases died—that I think any sound young adult is entitled to prefer operation to the continued use of a truss. Though there are many excellent operations, I regard a modification of Kocher's method as by far the best for the ordinary run of cases, Bassini's method being reserved for the larger herniæ of old standing with a widely dilated external ring.

Operations for Appendicitis.

There were 84 cases of operations for appendicitis during an attack, most of which were suppurative or gangrenous; and 149 cases of appendicectomy in "interval cases." Appendicectomy was also performed in 49 of the cases operated upon during an attack, the rest being treated by drainage only.

There is no need to dilate on so trite a subject as appendicitis; but I should like to state that I have come to the conclusion that the difficulty of gauging the actual pathological condition in a case of severe appendicitis is so great that I think it wiser to operate early—before the third day—in such cases, unless they speedily show signs of improvement after the first twenty-four hours. Another point upon which I have in recent years altered my practice is that I now invariably endeavor to remove the appendix in any case of operation for acute appendicitis, unless I think that by so doing I shall be adding to the patient's risk. If there are no other contraindications I have no fear of any harm resulting from opening the general peritoneal cavity in cases of suppurative or gangrenous appendicitis, and in many instances my search for the appendix has resulted in its discovery in a disorganized condition. I am convinced that the removal of the focus of mischief is highly desirable in these cases: it hastens the convalescence, prevents any further mischief, and is, I believe, associated with a lower mortality than simple drainage in most instances.

Other Operations on the Intestines.

The rest of the operations on the intestines amounted to 99. Of these, there were 43 cases of colotomy and 18 of enterotomy, 12 cases of colectomy and 2 of enterectomy, 14 cases of enterorrhaphy and colorrhaphy, 4 cases of ileocolostomy, 4 operations for intussusception, and 2 for obstruction due to peritoneal bands.

Nearly all of these cases were associated with intestinal obstruction, which is the bugbear of abdominal surgery. The difficulty of a sufficiently certain diagnosis in an early stage of acute intestinal obstruction, and the nature of the lesion, render all such cases extremely dangerous; yet the only means of reducing the terrible mortality associated with this condition is by early operation—within twenty-four hours of the onset if possible—for it may safely be said that in all cases of complete and acute obstruction the chances of recovery rapidly diminish for every hour that operation is delayed after the diagnosis is established. Continuous pain and vomiting for forty-eight hours, accompanied of necessity by the deprivation of food, may so reduce the strength of the patient that the surgeon is unable to make that systematic examination of the contents of the abdomen which these cases frequently necessitate.

In the performance of intestinal resection I always prefer the use of simple sutures to that of mechanical appliances, and of all intestinal sutures—and their number is large—I know none better or more generally applicable than Halsted's quilt suture. For direct end-to-end union, however, the O'Connell suture is very good. Only occasionally, where time is of great importance, do I employ apparatus, and of these the O'Hara forceps and Murphy button are the best.

In early cases of malignant disease of the intestine, the ideal method of treatment is that of resection and simple suture of the divided ends, but if intestinal obstruction be present the resection must be performed in two stages, for the resisting power of the patient is so small under these circumstances that immediate union of the resected gut is attended with a very high mortality. The obstruction should be relieved by bringing a loop of intestine to the surface with the tumor and inserting a Paul's tube in the distended gut above the tumor at the first operation; and enterectomy or colectomy, with immediate union of the divided bowel, should be performed at

the second operation a week or ten days later. I have successfully operated in this manner in a patient of the age of seventy-eight years.

Colotomy for irremovable malignant disease of the large gut is an unsatisfactory operation at the best. The patient is frequently in the last stage of a mortal disease, and operation under the usual conditions is as likely to hasten as to put off the inevitably fatal issue. Where the disease cannot be removed completely, a palliative operation, like colotomy, should be performed before the patient is exhausted by the absorption of toxic products from intestinal accumulation; but, whenever possible, a "short circuit" (ileo-colostomy) should be preferred, as this is less distressing to the patient than an artificial anus.

After-treatment.

The time at my disposal has not allowed me to do more than to speak cursorily of the more common affections met with in abdominal surgery, and I have not dealt with any of the rarer conditions which one must be prepared to encounter. We may now consider the after-treatment.

A pillow placed under the knees relieves the strain of the abdominal muscles; and the patient may, with advantage in most cases, be tilted to one or other side by placing pillows behind the shoulders and buttocks. This often gives great relief from the aching in the back which is so common in these cases. The pain of abdominal operations is not usually great, and in most of them no anodyne is necessary; but when pain is severe morphine may be given during the first twenty-four hours. After that period no morphine is allowed, for unless the case is not doing well, pain at this time is nearly always due to flatulence, and the best remedy for this is a turpentine enema. The relief from pain and distention is so marked after the administration of a turpentine enema that it may well be regarded as the "sheet anchor" of the after-treatment of abdominal operations. It may be repeated night and morning if necessary. In any case it is desirable to give an enema on the morning of the third day, and a purgative by the mouth on the third night, after operation, if the bowels have not previously acted. Should there be any suspicion of the onset of peritonitis, purgation should be effected.

Current Comment.

John Lindsay, M. D.:

In our practice there has been, as a rule, very little waiting for *the placenta*. When the child is born I immediately seize the uterus and either keep up pressure myself, or ask some one to do it (but I find that I often lose by that), till the child is separated, then keeping up the pressure on the uterus and slight traction on the cord the placenta is soon delivered. Dragging by the cord will not do it, but the combination of pressure with judicious traction soon does it. The pressure is kept up for some little time, then a pad and a firm bandage.

♦ ♦

C. D. Palmer, M. D.:

The subject of *inversion of the uterus* is a very interesting one; it has been my fortune to see about a dozen cases, ten of which were acute. In the earlier years of my practice I had a large obstetrical business, a great part of it being among German women, who were attended first by midwives, but occasionally by a physician, who called me in consultation. Midwives are generally blamed for inversion of the uterus; one of the first questions asked them is, have they pulled on the cord. Whether they have or not, of course, they all deny having done so. I believe that pulling on the cord is an active factor in the production of this trouble. I think many midwives in their anxiety to get rid of the placenta, etc., do pull on the cord. Another potent influence productive of inversion of the uterus is an undue fatty degeneration, or relaxation, or softening of the uterine wall. We all know fatty degeneration in the uterine walls may commence prior to delivery; it does in the placenta, but, of course, is carried on mostly in the uterus after delivery. All of the acute cases which I have seen were replaced by me without a particle of trouble. I think I saw them all within an hour or two after delivery. In all of the cases no anesthetic was used, and I succeeded in replacing the uterus speedily. I put the woman across the bed, irrigated the vaginal canal with hot water, made an indenture on the fundal wall, perhaps a little more towards one horn; and when I had secured an indenture to a certain degree, it was very

easy to increase the pressure and carry the indenture further. All of these patients recovered. I think after the inversion is relieved, it is always best to give a dose of ergot, because it secures the contraction and replacement. In two cases of chronic inversion of the uterus I had a great deal of trouble. In the first instance I was called in consultation by one of my assistants at the Medical College, who was in charge of a case in a tenement-house. This was a number of years after her last delivery. He told me that it was a fibroid of the uterus, presenting in the vagina, and he requested me to assist him in the operation. The woman was put under the influence of the anesthetic, two Sims' specula were inserted in the vagina, and the parts exposed. My assistant prepared to take it off by means of a wire cord. He had put the cord around what was supposed to be the fibroid, and commenced to turn the screw of the écraseur, when it struck me suddenly that we did not have a case of fibroid to deal with. I thereupon requested the doctor to stop his work, and let me examine as to the condition of affairs, and I found that we had an inverted uterus present instead of a fibroid. The seeming tumor was perhaps torn a little, at the point of ligature, but no harm was done. Attempts were made to replace the uterus several times, but unsuccessfully. Afterwards it was replaced by my assistant after weeks of preparatory treatment, also by continued taxis and pressure, indenture being made at one point of fundus. It is a very easy matter to make the mistake then made, and it taught me the importance of thoroughly examining cases of this kind when called in consultation.

In chronic cases it is important for us to have skill and courage, especially where the condition has lasted for years. I think Keating and Coe mention an instance, a case where the uterus had been inverted for twenty years and it was replaced. Various operations have been suggested to effect replacement, where prolonged taxis has not been successful. If I had a case of chronic inverted uterus, of course I should attempt to replace it as soon as antiseptic and aseptic precautions could be carried out. If I failed the first time, I should continue my efforts subsequently, perhaps in a week or a month thereafter. If I did not succeed in accomplishing its replacement by repeated and prolonged taxis, then I should attempt some operation. Two operations have been mentioned in connection with

these cases. Thomas advised opening the abdomen, stretching the ring of contraction at that place, and at the same time make pressure from below. The great difficulty is to overcome the constriction at the cervix; when you have succeeded in doing that it is a very easy matter to make the indenture, and replace the uterus. The operation proposed by the elder Dr. Tate is ingenious and may be successful; it was with him. The operation of amputation and removal of the uterus is a record of the past. Nobody would think of a removal of the uterus in cases of chronic inversion, it matters not how prolonged they might be, until every other means of correcting the difficulty had been considered, and repeatedly and faithfully tried.

♦ ♦

Sigmar Stark, M. D.:

In connection with the subject of *inversion of the uterus*, I wish to say that my experience has been limited to one case, and that a chronic one due to a fibroid polypus. The case was one which came on my service at the Cincinnati Hospital three or four years ago, and the case was diagnosed as one of polypus by the interne, which diagnosis I confirmed on superficial examination. My examination was made with the patient in bed. Arrangements were made to operate on the woman a few days hence, which I proceeded to do. When the patient was placed upon the table in the amphitheater I made a careful examination and recognized that I had a case of chronic inversion of the uterus, associated with a polypoid fibroid, to deal with. Inasmuch as this was my first experience (as is usually the case in connection with rare conditions), I at the time was not thoroughly familiar with the anatomical conditions connected with inversion of the uterus, and likewise with the *modus operandi* of dealing with it; hence, I had to act as seemed most expedient to me. I thereupon proceeded to split up the posterior wall of the uterus. My great fear at the time was that if I incised the anterior wall of the uterus I might encounter the bladder. It was subsequently that I learned that the bladder becomes detached from the uterus practically always in chronic inversion of this organ. I do not know whether or not this is true in acute inversion, but in chronic inversion of the uterus there is little or no danger of damaging the bladder in operative interference. As stated above, I split the posterior wall of the

uterus from the junction of the internal os all the way up to the fundus. The patient having passed the menopause and having been a great sufferer from hemorrhages, there was absolutely no objection to performing a hysterectomy. I therefore proceeded to do a hysterectomy, and with the posterior wall of the uterus split through into the peritoneal cavity I could readily get to the broad ligaments, which I tied off on either side. After doing so I made an incision laterally from the posterior median incision of the uterus and continued this around to the front, after satisfying myself that the uterus was not in contact with the bladder wall, doing a supravaginal hysterectomy. I then sutured the peritoneal surfaces together and readily turned the cervical stump into the abdominal cavity. The patient made a very nice, prompt and easy recovery.

In regard to the treatment of cases not complicated by tumor, or in which a radical operation is advisable, naturally our first efforts should be made to reduce the inversion by means of taxis, and if this fails the ideal operative procedure is the following one. An incision should be made through the posterior wall of the vagina, a transverse incision. (This operation is not original with me. I read it in one of the German journals, and it is being practiced in Germany and probably elsewhere.) After the transverse incision a longitudinal incision is made through the median portion of the uterus all the way through the cervix up as high as may be necessary in order to restore the inversion. After the posterior wall is split up the inversion is overcome, the fundus of the uterus is caught by a tenaculum through the opening in the posterior wall of the vagina and through the wall of the uterus; the uterus is then closed and returned into the abdominal cavity, and the posterior incision is closed up. That seems to me a very simple procedure and thoroughly rational.

♦ ♦

J. N. Baker, M. D.:

The operation of choice for *acute or chronic ulcer of the stomach* or duodenum is a "no-loop" posterior gastrojejunostomy. This is the operation which the Mayos, by preference, always make. In their last 136 operations they report but one death; a mortality of less than one per cent. Nor is this showing exceptional, for it is being duplicated by others. By the employment of this "no-loop" operation, one of the chief

subsequent unpleasant complications, chronic regurgitation of bile—the so-called “vicious circle”—is practically obviated.

The incision is a liberal vertical one from $\frac{3}{4}$ to 1 inch to the right of the median line, splitting the fibers of the rectus abdominis muscle, the lower end of the incision being opposite the umbilicus; through such an incision the gall-bladder and appendix can also be reached without difficulty. The transverse colon is drawn out of the abdominal incision and by a steady traction to the right and upward the mesocolon is brought out until the jejunum comes into view, and the intestine is grasped at a point three or four inches from its origin. On drawing the jejunum tight, the fold of peritoneum that covers the ligament of Treitz—which is a small band containing muscle fibers—is developed; this band will be found to lead to the base of the vascular arch of the middle colic artery, and accurately marks the place where the transverse mesocolon is torn through to secure the posterior wall of the stomach. The stomach is drawn through this opening and the anastomosis performed; beginning at a point one inch above the greater curvature and ending at the bottom of the stomach, two and a half inches to the left. In order to secure a proper low point a small opening is made in the gastro-colic omentum and one-half inch of the anterior wall pulled through behind. Having these features in view, a considerable portion of the posterior wall is drawn into a pair of light elastic curved clamps,—the blades being protected by rubber tubing. The handle lies to the right and transverse to the axis of the body. Beginning one and one-half to three and one-half inches from its origin, the jejunum is drawn into a similar pair of clamps, placing about three or four inches of this viscus opposite the mesentery within the grasp—the handle being also to the right. It will thus be seen that the left low point of the stomach lies in the tip of the clamps and the distal point of the jejunum lies also to the left. The two clamps are now placed side by side and a continuous cushioning suture of celluloidal linen, carried on a fine cambric needle, running from left to right, fixes the intestine to the stomach; this line of suture should extend for at least two and one-half inches.

The stomach and intestines are now incised one-sixth inch in front of the suture line and the redundant mucous membrane excised flush with the retracted peritoneal and muscular coats.

With a No. 1 chromic catgut on a straight needle the posterior cut margins of the entire thickness of the gastric and intestinal walls are united by a continuous lock stitch from right to left; at the extreme left, the suture changes to one which passes through all the coats of each side alternately, from the peritoneal to the mucous, then directly back on the same side from the mucous to the peritoneum. This acts as a hemostatic suture, and also rolls the serous coats into apposition. It passes around the anterior surface and is tied to the original side, which has been left long for that purpose. If silk or linen is used for this suture, it may hang in situ suppurating for months.

The clamps are now removed and the linen thread continued around until it is tied to the original end, firmly catching the blood vessels in sight along the suture line.

Finally, the margins of the incised mesocolon are united to the suture line by three or four interrupted sutures. These sutures are important in that they tend to hold the jejunum in place and prevent angulation and kinking.

The abdominal incision is closed in tiers and without drainage.

After-treatment.—On being placed in bed, a glass female douche point is passed just above the internal sphincter ani, attached to a gravity bag filled with deci-normal salt solution. The elevation should not be greater than six or eight inches and the small stream thus flowing into the colon is taken up with avidity.

The patient is then placed in the Fowler, or exaggerated Fowler, position. After sixteen to twenty hours, an ounce of hot water may be given every hour; this is rapidly increased, and in thirty-six hours the usual experimentation with liquid feeding is instituted.

Rectal feeding is unnecessary.

John E. White, M. D.:

In puerperal *eclampsia* there are undoubtedly two conditions to be combated—namely (1) increased heart action, with high arterial tension, and (2) nervous excitation. The pulse is quick and tense, the voluntary, and possibly the involuntary, muscles are in tonic and then in clonic spasms. And when the contractions are over, there still remains an irritation of the nerve centers tending to another explosion.

Now, what is the physiological action of *veratrum viride*? The action on the heart is, first, to lessen its force, and later, to reduce its rate by direct action on its muscle and by stimulation of the inhibitory nerves. Correspondingly, *veratrum* lowers arterial tension by relaxing the muscular coats of the vessels. It lessens greatly the function of the medulla and spinal cord. Hence we see that this drug meets these two conditions that call for our immediate attention. Will other remedies meet these requirements?

Morphine, one of the most highly-thought-of remedies, is surely sedative and anti-spasmodic, and positively has a benign influence upon this condition. But a comparison of this drug with *veratrum* shows (1) while morphine slows the heart it requires a considerable dose to produce this effect; *veratrum*, on the other hand, will, in moderate doses, reduce pulse rate. (2) Proportionately smaller doses of *veratrum* usually control muscular spasm. (3) There is no locking of secretions with *veratrum*. In fact, there is probably increased skin activity at first, and one authority mentions a resulting diuresis. With morphine there is general diminishing of waste elimination, and cumulative action is said to be especially liable when the function of the kidneys is defective, as is always the case in the disease in question. (4) The patient reacts more readily from *veratrum* than from morphine.

Chloroform is recommended. The effect of this, it seems to me, is quite transient, or, I should say, only relieves an individual spasm. It is claimed, also, that prolonged anesthesia produces acute fatty degeneration of the heart and impairs the kidneys.

♦ ♦

John F. Winn, M. D.:

No subject in the range of obstetrics to-day is attracting greater attention of obstetricians than that of *toxemia of pregnancy*. It has been my fortune or misfortune to see quite a good number of these cases in consultation and in my own private practice, and I especially wish to emphasize two points:

1. The unquestionable value of prophylaxis and elimination.
2. The importance of early, unremitting, and systematic medical supervision of every pregnant case.

Toxemia of pregnancy is now generally believed to be caused by a disturbance of nitrogenous metabolism.

At a recent meeting of the New York State Medical Association the modern aspects of pregnancy-toxemia were discussed in the form of a symposium, and the consensus of opinion was that "this failure of oxidation in the system can best be determined by a study of the nitrogenous portion in the urine, and by observing that the nitrogen passed is not in the form of urea, but in various combinations of this substance, the most prominent of which are the ammonia and amide substances." It is to be borne in mind that in order to determine this change in the urine in a twenty-four-hour specimen must be taken, and it must be known what the patient has eaten, for on a full diet there will be eighty-five per cent. of urea nitrogen in a normal individual; whereas, on a low diet, such as is frequently given in pregnancy on account of nausea, the urea nitrogen may exceed more than sixty per cent." It will be observed, therefore, that this disturbance of nitrogenous metabolism in the liver does not always lead to a diminution in the total amount of urea excreted, but rather to a diminution of the ratio between urea and the total nitrogen in the urine.

In view of this discovery, it would appear that we must, when examining the urine, look *not so much to the loss of urea as to the excess of ammonia*, for the danger signal.

The treatment of this condition begins with the most rigorous prophylaxis from the time the pregnancy is suspected. I do not think I put it too strongly when I say that the proper management of these cases necessitates, in some instances, nothing short of a revolution in our medical ranks. It is often that there is exhibited an indifference to the dangers of pregnancy that is appalling and well-nigh-culpable, as proven by the fact that often a specimen of urine is not even asked for. If, perchance, the patient of her own volition brings it to her physician, it is not always tested. How many of us are sometimes satisfied with one, or at best, two, urinary analyses, and these in the latter weeks of gestation.

With the present knowledge of pregnancy-toxemia, I cannot insist too strongly upon the great necessity for the education of our patients concerning the autotoxic state. They should be instructed to heed the earliest symptoms of toxemia, and should make it obligatory upon them to report promptly any symptom which indicates a departure from the normal condition. For the reason that many of the milder, as well

the more severe types of toxemia have their origin as intestinal intoxication, we should always impress upon patients the importance of keeping the bowels regular, and especially should they be told the importance of keeping a close watch upon the total amount of urine excreted daily, for diminished urinary excretion is known to be of greatest clinical value. Not only encourage the drinking of a liberal amount of water at all times, even before the kidneys "go on a strike," but make it a definite and written order that not less than three or four pints be drunk daily. Seek to remove the prevalent belief among the laity that the "morning sickness" has no special significance; and, *above all, teach the laity the importance of consulting a physician as soon as pregnancy is known to exist, and acquaint them of the danger of deferring this duty until headache and edema develop.*

Even in normal cases urinary examinations should be made once in four weeks up to the seventh month, and as often as every two weeks during the remaining period of gestation, and oftener, if suspicious symptoms develop. It is a good rule to designate the exact day on which the specimen of urine is to be brought to your office. Select one day for analysis. Specify the number of ounces to be brought in a clean bottle. I need hardly say that a few systematic rules along this line will help to impress upon the patient the importance of keeping her physician informed as to her condition.

♦ ♦

Henry D. Furniss, M. D.:

In speaking of the *value of cystoscopy in gynecology*, only general consideration will be paid some of the more important points.

Before resorting to the use of the cystoscope for diagnosis, all the information possible should be sought after in a thorough history of the case, a painstaking general examination of the patient, including search for tubercle bacilli in the sputum if there is expectoration and cough. The urine requires careful consideration, especially with reference to the chemical reaction, the presence of crystals, blood, pus, or atypical cells that might be indicative of new growth. From a pelvic examination the cause of the urinary disturbance can frequently be discovered.

The proper equipment for cystoscopic work should include

a number of instruments, especially the Kelly with an electric light at the bladder end, a double barrel catheterizing direct (water dilating), and indirect view examining, and a Cullen. If only one instrument is to be had, the double catheterizing direct-view water dilating, such as the Tilden Brown, should be given the choice. By the removal of the telescope we have an instrument that is a Cullen, suitable for examination and treatment by topical applications. As a general thing, examination with a water dilating instrument is preferable, but at times we are forced to use one in which dilatation of the bladder by air is accomplished, either on account of the small size of the bladder, or the rapid accumulation of blood, or pus, that would cloud water when this is the medium through which the examination is to be conducted.

When carefully performed, cystoscopy is not ordinarily dangerous. In tubercular cases it is especially harmful, and should not be used except for absolute indication; i. e., as when nephrectomy is considered, and a knowledge of the condition of the other kidney is essential.

From my experience, I have been surprised to discover how much discomfort there is, when there is so little to be found of a pathological nature in the bladder, and this applies especially to those cases of fissure of the neck of the bladder, and trigonitis.

We do not see as many cases of cystitis in women as in men; the most probable reason of which is the good drainage through the short urethra, so seldom the seat of stricture. The simple introduction of germs into the bladder is not ordinarily sufficient to produce an inflammation of this organ, but if added to this there is an obstruction, the dangers of cystitis, ureteritis, pyelitis, etc., are much increased. With the exception of tubercular cystitis, the most serious cases of cystitis in women that I have seen, have been in those suffering from urethral obstruction from new growths.

Cystoscopy teaches us that many of the cases of cystitis are not general, but local, and more amenable when treated with topical applications, than when bladder irrigations are used.

In tumors we can frequently determine whether they are benign or malignant from their appearance and method of attachment to the bladder wall, operable or non-operable, and if operable in what manner they can best be removed.

The appearance of the mouths of the ureter as seen through the cystoscope is of the greatest diagnostic aid in cases of ureteritis, pyelitis, simple or tubercular, hydronephrosis, and tubercular kidney. Often the lesions around the ureteric orifices are so characteristic as to render ureter catheterization superfluous. It should be remembered that the ureter mouths may appear normal with serious trouble in the urinary tract higher up.

In the ureter catheter we have an instrument that serves a number of purposes. In difficult operations requiring close dissection in the neighborhood of the ureters, a catheter or guide inserted will so mark it that injury is less liable to be done. Should it occur the ureter can be repaired on the catheter as a splint, and the instrument left in for drainage. In the first autopsy that I ever did, both ureters had been included in the broad ligament suture after the removal of a large fibroid. Had ureter guides been used, the probabilities of this accident happening would have been almost nil; it is possible that had ureter catheters been passed after the operation, the obstruction could have been overcome as the suture material was plain catgut, which at the time of death had been almost digested.

By means of the bougie we can detect strictures in the ureter, and some of these can be remedied by dilatation with increasingly large instruments. Often we can get an impression of a stone by the use of a wax-tipped catheter or bougie. In hydronephrosis we can determine the amount of dilatation of the renal pelvis by observing the amount of urine withdrawn by the ureter catheter passed above the point of obstruction. Kelly claims that this is of quite frequent occurrence, and reports good results from dilatation and drainage.

Given a urine containing blood, pus, or atypical cells, with the catheterizing cystoscope we possess the means of determining exactly from which portion of the urinary tract these have their origin; much better than a series of exploratory incisions over a tract so extensive as the urinary. It is surprising to see how many cases of pyuria, especially an acid pyuria that persists, have their origin in the kidney or its pelvis. Many of these cases of pyelitis respond to lavage of the pelvis, after general treatment extending over a long period of time has proved futile. In these it must always be borne in

mind that tuberculosis or stone may be the underlying factors; here more harm than good is likely to arise from local treatment.



Chas. T. Souther, M. D.:

To introduce a *tampon* one of three ways may be used: An ordinary Graves' speculum and lithotomy position. After the cervix has been properly engaged and treated, a long uterine dressing-forceps holding the tampon is pushed through the speculum into the vagina; hold tampon against the upper blade of the speculum, and by pushing on the anterior lip of the cervix push it and tampon as far back as possible and withdraw the speculum. This allows the anterior and posterior wall of the vagina to fall in front of the tampon and hold same in position. It also aids some in replacing a cystocele or rectocele when present.

When treating patients in their home and no suitable table is at hand, we can resort to Sims' posture, and after bimanual reposition of the uterus introduce Sims' speculum and place the tampon in front of the cervix, so it will be held well back in the pelvis.

We can use, in bad cases, or whenever desirable for any reason, the genu-pectoral posture, and carry out the same procedure as above. Inserting a tampon in this case is usually very easy and effective, after the reposition of the uterus. A pneumatic rubber pessary of proper size is very excellent in these cases, used just as a tampon, when the service does not need any special treatment. In the knee-chest posture a tampon or pneumatic pessary can be introduced very high, and usually retains its position very nicely.

Placing a tampon in the posterior vaginal cul-de-sac, if it is really placed there, tends to increase and encourage retroversion. Fortunately, it is a procedure much easier to talk about than it is to do, and when we attempt it we usually succeed in getting the tampon under the cervix and not behind it, in which case we may elevate the uterus and not do any special harm.

If there be any indication for a tampon placed behind the cervix it is in extreme anteversion, without flexion. In anteversion we usually have no enlargement, and hence no symptoms other than possibly dysmenorrhea, bladder pressure, and

sterility, plus a small or infantile uterus. These conditions are not indications for tampons as a rule.

We can liken the uterus to a clothespin on a line; the head represents the body and the legs the cervix. When the cervix is pushed back the fundus comes forward, and vice versa. The comparison is a crude one, but serves the purpose. I think that if we use a small tampon behind the cervix in anteversion we may do some good, but even in this class of cases I have gotten good results by using a pneumatic pessary placed transversely to the pelvic axis, to push the whole uterus back off of the bladder. However paradoxical this may seem, when studied carefully it will be found that there is no violation of the laws of physics that govern such conditions.

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G. S. Towne, M. D.:

I will relate my personal experience with my last two cases of *ectopic pregnancy*, which came under my care last August, in order to show some points of interest in the clinical history, diagnosis, and treatment of this condition.

Mrs. B., age twenty-five; housewife; married for two years; never pregnant before. Began menstruating at thirteen years. Menses always regular and painless; usually lasting about three days; patient's physical condition good; fairly rugged in appearance, but small of stature.

July 5, patient menstruated regularly as usual; menses continuing for three days,—then ceased. Began again after an interval of two days and continued for three weeks, during which time she had some morning sickness, enlargement of breasts, with a slight secretion of colostrum, a sense of fullness in the lower portion of abdomen; symptoms were all mild, even the menses being only slight, soiling only two napkins daily on an average.

July 26, about noon, patient was suddenly seized with severe abdominal pain low down in abdomen. This pain came on very suddenly, without any extra exertion or fall, and was very severe and constant. I saw patient about one and one-half hours after the onset of the pain, and was told by a woman who had been called in that "the patient had cramps; that they had been so severe that she fainted." The patient's condition was fairly comfortable when I arrived, slightly pale, small pulse at the wrist, 120 per minute; temperature slightly sub-

normal; abdomen slightly distended and tympanitic; some tenderness over lower abdomen. Vaginal examination showed some fullness in right ovarian region; no mass could be felt; uterus slightly enlarged.

Diagnosis seemed obscure to me and I ordered only palliative measures. Patient improved and was very comfortable, when on July 30, just four days later, she had a repetition of the same symptoms, only much exaggerated; pulse 140, temperature sub-normal; face anxious and pale; patient very restless; abdomen considerably distended and slightly dull over lower portion; no difference in vaginal condition. Ruptured ectopic gestation suspected.

The patient was taken to hospital, but refused operation. Palliative measures were again resorted to and once more patient became comfortable; pulse and temperature both approached normal, but face was very pale; hemoglobin, forty per cent.; tongue very much coated and breath very foul.

August 3, was sitting up in bed against orders; attempted to reach something on the table beside the bed and was again seized with similar symptoms, only less severe. Operation again advised and refused, but on August 5, patient consented to an operation, which I did early Monday.

The abdomen was found filled with liquid blood, the amount estimated by those present to be about three quarts. A large oblong right tube was found and promptly clamped by the sense of touch. The blood was removed hastily; the tube tied off, and the abdomen closed; the operation lasted thirty-three minutes.

The tube had a large rent in the fimbriated extremity representing the placental site, being partially occluded by it. Upon opening the tube, a complete sac was found filled with amniotic fluid and in the center a small four weeks fetus.

The patient made a very uneventful and rapid recovery and returned home twelve days from the operation.

The second case came under my care August 23. Mrs. B., age twenty-six; married; housewife; mother of one child when she was sixteen years old; one miscarriage about four years ago. Began menstruating at fourteen; always regular; menstruation painless and never excessive; general appearance robust; weight about 160.

Menstruated last in the second week in June; consulted me

the last week of July to determine whether or not she was pregnant.

She had had morning sickness; a sense of fullness in the breasts with some secretions present. There were no other symptoms.

The vaginal examination was practically negative, for I was able only to outline a slightly enlarged uterus through a very thick abdominal wall. The patient being a very imaginative person, I doubted the symptoms she gave and thought she was pregnant.

August 23, while visiting at a friend's house three miles in the country and carrying one of the children on her back about the yard, she was suddenly seized with excruciating pain in the abdomen. This happened about 6 P. M. I saw her at 6.45, at which time she was extremely pale; pulse small, thready, and 128; respiration much accelerated; temperature subnormal; patient bathed in profuse perspiration and having every appearance of intense suffering and extreme prostration. The abdomen was very much distended and tender.

Aided by the symptoms which she presented in July, and which I was then inclined to regard as bogus, I diagnosed her condition as ruptured ectopic gestation and began prompt preparations to get her to the hospital. We were much hindered on account of the distance and the absence of a telephone, and it was half-past eight before the ambulance arrived at the hospital with the patient. Her condition was then desperate. She had a sighing respiration which seemed an exertion; she was pulseless at the wrist and her pallor was extreme.

Dr. Resseguie saw the patient with me upon her arrival and confirmed my diagnosis. Her condition seemed almost too hopeless to permit operation, but it was absolutely her only chance and was promptly done; pulse over the heart was 152.

Saline transfusion under the breasts was begun as soon as the patient was upon the table and continued throughout the operation. In all 250 cubic centimeters were put under each breast.

The abdomen was opened and an empty dilated tube, at the right horn of the uterus, found and clamped. The amount of liquid blood and clots that escaped through the incision was estimated by the doctors and nurses present as one gallon. The tube had ruptured at its junction with the uterus and the

bleeding was from branches of the ovarian artery which had compensated to meet the requirements of the pregnancy. Some difficulty was experienced in suturing the rent in the uterine wall as the tissue was very friable, the placental attachment having taken place at the point of union of the uterus and tube. A large hematocele, extra-peritoneal, had dissected its way through the broad ligament and over a large area of the side of the pelvis. This was emptied partially by exerting pressure upon it and thus forcing the blood back through its point of entrance. A hurried search was made through the abdomen for the fetus, which was not found. I then put about two liters of normal salt in the abdomen and closed the wound; the operation lasted forty minutes.

The fetus was not found either in the abdomen or in the clots, and consequently I have only the remnants of the tube upon which to base my judgment regarding the age of the pregnancy. However, since it is now a month subsequent to the operation and there are no symptoms to denote any difficulty either of absorption or a foreign body present in the abdomen, I think it is safe to assume that the pregnancy was young and that it is already absorbed.

The first case was rather a simple one of isthmic tubal pregnancy, partially aborted. The second one was a ruptured tubal pregnancy, being almost a tubo-uterine type. Both show the necessity of operative procedure; the one showing that procrastination may not always prove immediately fatal; the other, that only the most prompt and heroic measures alone can save the patient.

Not much can be learned from the clinical history of this condition. I do not believe it possible to diagnose ectopic gestation earlier than the fifth or sixth week without the presence of some disaster to the pregnancy to aid one in its recognition; but, with a clinical picture of collapse, extreme pain in the lower abdomen and evidences of a concealed hemorrhage, it is not so difficult.

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H. O. Feiss, M. D.:

On account of an unpleasant newspaper notoriety the term "bloodless" has been associated with *orthopedic surgery*. Nothing could be more erroneous than to suppose that any orthopedic surgeon would for a moment hesitate to cut if a

cutting operation were indicated. Bloodless surgery is as old as Hippocrates, who accurately describes a correct treatment of club-foot by the bloodless method. A number of operations, however, must require the use of the knife or tenotome to bring about the proper results. Then again there are a number of deformities in which the result may be obtained either by operating or by braces; for example, bow-legs. In such a case much depends upon the condition of the child and its age. Sometimes the decision may be left to the parents, the chief point being that brace treatment, to effect a cure, always requires a considerable length of time, while operative treatment, if it is indicated, may accomplish the same things very quickly, but with a slightly increased danger. It must always be remembered, however, that even after operative treatment, plaster or braces may be indicated for a period afterwards.

What are the aims of orthopedic surgery? There are few things in this specialty which can be accomplished quickly. Almost every case is a severe test of patience, both to the surgeon and the patient. The latter often hopes for a cure when none can be accomplished. Many cases wander from one man to another, sometimes getting into the hands of osteopaths, bone-setters, and the like, and then often philosophically deciding that the less done the better. The patient thinks he has tried everything and has given up in despair. It is often true that such cases are justified in their opinion, but it is seldom that a case cannot be improved at least a little. This should be the first aim of the orthopedist, namely, to improve if only to a slight degree. It is only by steps of improvement that a good result can be finally accomplished. To measure improvement entails the keeping of fairly accurate records, occasional photographs and tracings. In this way it is often possible to satisfy the patient of what has been accomplished.

We have said enough to show that an important part of orthopedic surgery is the treatment of incurable cases, as, for example, those of the tubercular type, which are often bound to result in ankylosis in spite of everything. Such cases are not spectacular, nor are they the easiest to treat, but they are the ones which require the specialist, above all, because the final position and the degree of deformity depends in every case upon the treatment.

In such cases as are curable, as for example, club-foot, the

element of time is of great importance. Not only must the deformity be obliterated, but as the part assumes normal contours, it must learn to functionate in a normal manner. Not until this stage is reached can the case be said to be cured.

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J. M. Frankenburger, M. D.:

The study of cancer loses none of its interest as time goes by; and while no tissue of the body wherein we find epithelial cells is immune from carcinoma, certain localities, the skin, uterus, mammæ, and the gastro-intestinal tract, are especially prone to be the seat of attack. If we stop to consider that between six and seven per cent. of all cancers occur in the rectum and sigmoid flexure, we can readily appreciate the importance this subject assumes.

As it would occupy too much time to give in full the surgical treatment of *cancer of the rectum* and sigmoid, I will speak only of the treatment of the lower end of the rectum, within three inches of the anus.

It is unfortunate that a great majority of low rectal cancers are self-diagnosed by the patients as piles, and allowed to pursue their course without an examination until the disease has involved the contiguous structures, in the male the prostate, bladder, urethra, etc.; in the female the vagina, bladder, etc. Many cases are seen when it is too late to attempt to extirpate the tumor by amputation or resection. Some of them will be greatly benefited by a thorough curettement of all cancerous tissue that can be detached followed by the actual cautery. This is a minor operation, does not shock the patients, and often gives them a great deal of temporary relief.

Extirpation of the growth can either be performed by the perineal route which I will describe, or through the sacral route known as the Kraske operation. The mortality of the perineal method being far below that of any other method is certainly one reason to recommend it, if the cancer can be reached by this route. The greater per cent. of the mortality being from sepsis, the surgeon should endeavor to exercise the same care in regard to cleanliness in this operation as though he were performing a laparotomy.

The bowels should be well cleansed out and then left undisturbed for at least twenty-four hours prior to operation so that the fecal contents can become solid, thus obviating the

danger of the field of operation being flooded with liquid feces. The patient, being anesthetized, is placed in the lithotomy position and brought down well to the edge of the table. The condition of the sphincters governs the site of the first incision. The rectum, after being thoroughly irrigated, is loosely stuffed with gauze. An incision through the skin around the anus is then made and dissected up inside the rectum far enough to tie a stout ligature around the tissue so dissected. This will serve to keep the contents of the bowel from running down over the operative field. The anus may then be cauterized with pure carbolic acid or touched with the paquelin cautery. The external sphincter muscle is then incised anteriorly and posteriorly, the posterior incision being carried well back to the coccyx. If additional space is required, the coccyx may be removed. Should the muscle not be involved it should be left in the flap thus made, otherwise it should be dissected out. The rectum is then dissected loose from its posterior and lateral attachments, pulled backward and separated from its anterior attachments as high as the levator ani. By gentle traction, many of these fibers can be loosened from the rectum, the remainder being cut through. The lateral folds which hold the rectum should be cut through and the rectum will then come down well into the wound. Should it be necessary to open the peritoneum, this should be done at once and the gut dissected loose to a point above the growth when it should be brought down below the peritoneum and the peritoneum closed by cat-gut sutures.

The rectum is then amputated above the tumor and its upper end sutured at the anus. Should it be impossible to pull the rectum down far enough to stitch it to the anus, a tube should be introduced in the bowel and the wound packed with gauze and left to heal by granulation. In the female this method may be combined with the vaginal route by a deep incision through the posterior wall of the vagina.

In the perineal operation the operative mortality is lower than that from any other method of amputating the rectum, being 13 per cent. On that account alone can it many times be performed in debilitated patients who would be unable to withstand a more serious operation. The inability to follow up the lymphatics to any distance and dissect out infected glands is the one serious drawback. Incontinence from this

operation is not so great as in other operative procedures, as the sigmoid flexure, the fecal retainer, is preserved intact. Adhesion to the bladder, uterus, or prostate does not necessarily contradict an operation as the adhesions may be purely inflammatory in character.

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H. F. Long, M. D.:

My experience has demonstrated that it is not the specialist alone who is confronted with the problems involved in *gall-bladder surgery*. Within the space of a few months I have been called upon to deal with a series of ten cases, a fact which is significant of the prevalence of this disorder under circumstances which must be met by that individual from whom the public demand so much, the general practitioner.

From this experience I have found that there was present in every case a history of intestinal infection of some description, and that the infected gall-bladder dated back to this infection, and that the degree of pain experienced has no relation to the number of stones present.

That a colecystitis in which no stones exist, but in which the gall-bladder contains a viscid fluid too thick to be forced through the duct will occasion as much pain and as much toxemia as though the gall-bladder were full of stones.

That among the intestinal infections previously alluded to chronic appendicitis is particularly liable to be associated with infection of the gall-bladder, appendicitis, loose kidney, and diseased gall-bladder frequently coexisting.

That cholecystectomy should not be done unless there is evidence that the gall-bladder is itself diseased.

That there is a large percentage of cases in which jaundice does not occur though the stone be present in the common duct.

That the surgeon who waits for the graver "classic" symptoms such as jaundice, clay-colored stools, enlarged liver, etc., which may never appear, makes a serious mistake and will miss the opportunity of relieving many patients who suffer from disease of the gall-bladder.

That all cases, unless indications for immediate operative interference are present, should be tided over and brought to an interim operation.

Mary E. Bates, M. D.:

Given a vaginismus, and with it an adherent prepuce with concretions, it is fair to assume their relations as that of effect and cause. Two cases illustrate my subject, *phimosis in the female*:

Case 1. Mrs. S., first married at 34 to a "man old enough to be her father." Entertained for him a great respect, esteem, and was "really fond of him."

At first she had more or less sexual desire, and while intercourse was not easy, and rather painful, it became increasingly difficult, and finally practically impossible.

Her husband suffered from the sexual insistence common at his age, and this, with his growing lack of power to complete the act, made him irritable and morose, which reacted on her. She became anxious and worried, and in proportion as she tried in vain to please him, she developed a marked vaginismus, until copulation was physically impossible.

She had an extreme case of adherent prepuce, with large concretions, great irritability, and required a circumcision to relieve.

The hypersensitiveness of the introitus vaginæ was much improved by this operation, but still it was not satisfactory from the marital standpoint, and I snipped the tonically contracted circular muscular fibres at the base of the hymen on both sides and secured a relief from the nervous reflexes and from the local discomfort.

By this time she had reached the limit of endurance of his hatefulness and cruelty, and lost all mental willingness to live longer with him. This marriage was a failure.

Whether the vaginismus would have developed had her husband been young and powerful, I do not know. Causes are peculiar things. What they produce and what they do not depends upon so many other things.

The adherent prepuce in this case was the predisposing cause. The profession has paid so much attention to "exciting causes" that until very lately the predisposing causes have been much ignored. "Removal of the cause" is the sine qua non of cure of numberless disorders, yet of late the profession has sought for removal, the extrinsic causes, chiefly.

We know a lot, comparatively, about bacteria, and how to deprive them of human opportunities is the study of the age. But

of the conditions in the body which must needs entail a waste of nerve power, and undermine the "resistance" which is the most vital of all protections against invasions from without, we know lamentably little.

The same patient may present several sources of nerve waste, nerve leakage. Wherever an organ makes requisition upon the general fund of nerve force for more power than it normally should require to perform its work, some other organ must go short. Wherever an irritation exhausts the nerve force reserves, some functions must suffer from inadequate amount of power.

The human body possesses a wonderful adaptability to unfavorable conditions, but no one can know just where the line is drawn, and because no one can surely measure the process or gauge the capacity of a given individual to adjust and resist, no one can know where lies the limit of safety beyond which the "endurance" has ceased to be a physiological virtue, and nature's inevitable revenge begins.

Then, too, some intrinsic causes, anatomical imperfections, count for more than others. Causes are like cards. One cause may count for more than another. Then, too, it depends on the game. A number of causes may operate continuously, apparently innocuously, when some last trivial straw may precipitate disaster. In removing causes one must remove enough of them to carry the patient inside of the lines of endurance. For once "endurance" has suffered defeat, it takes far less to overcome it. For instance: Mrs. W., aet. twenty-six. Married her husband ten days prior to his departure on a ten months' trip. She had a history of dysmenorrhea, and facial acne. Otherwise fairly healthy, though not robust.

Had intercourse seven times. Had too much pain until the last two times to know much about her sexual capacity. Never had any preliminary desire and did not have pleasure. Wanted to micturate constantly during the day and had to get up for that purpose several times at night.

Found adherent prepuce with concretions and extreme anteversion. Local massage corrected the tendency of the uterus to rest on the bladder, and separation of the hood under cocain very greatly modified the irritability of the bladder. About the second week after treatment was begun, and she was practically well, she cried all day, and the bladder symptoms returned in

force. I had evidently only carried her over the border limit and not far enough for her to withstand any considerable nerve strain from any source. I sent her to the oculist, hoping there to find another nerve leakage of sufficient moment, the correction of which would leave her power enough so that she could cry without coming to grief with her bladder. The oculist kindly demonstrated one normal eye and one with high myopia and a hyperphoria.

In this case, while the adherent clitoris was sufficient in itself to predispose to the irritable bladder, given such an exciting cause, saved her only enough nerve force to keep her just on the line if she did not indulge in any other luxury of nerve wasting, such as a "good cry." She could not accumulate a reserve for such emergencies. Having enough "eye-strain" to rob her of nerve power constantly, and capable alone of effecting just such a condition of imperfect nutrition, because of insufficient nerve force, and of producing also, without help from an adherent prepuce, an irritable bladder, the relief of both ought to save power enough to effect a cure. I don't know which condition constituted the most powerful cause. She endured both without trouble, except that she was "nervous" (as most women expect to be, and do not think it abnormal), while the exciting cause existed. Removal of the exciting cause did not restore her nervous equilibrium. Neither did release of the clitoris.

Case II. The other vaginismus case was in a young woman of 25. She had menstruated first at 17 and had married at 21. Had always had dysmenorrhea and backache, which had been only at that time, but was now practically constant. Occipital headaches were frequent, also pain in the left inguinal region. When six months married she left her husband for a six months' visit and dreaded to return. Claims to love him and to want children. Has not been pregnant. Has never experienced libido sexualis. Intercourse occurs once in a month or two.

Patient is very anemic, frail and unhappy looking. They tell me that the first question I asked her was "Are you one or two hundred years old?" Yet she looked more like a girl of 17 than a woman of 25 and married.

A man with her expression would be marked for a "sex-neurasthenic" at once. She exhibited some morbid tendencies, being inclined to suspect everybody of sex irregularities, immoralities, etc.

She herself was suspected of malingering, and had at one time received some benefit (not enduring) from a practitioner of suggestive therapeutics.

Until the cocain found a foothold, the separation was exceedingly painful and excited uncontrollable trembling of the lower extremities, which did not cease for half an hour. The clitoris was larger than normal. I have found this to be the case, especially where the concretions are large. At any rate, after the parts have healed, the clitoris seems, in the language of several of the patients "to have shrunk."

This patient had a marked vaginismus. She could not tell whether penetration had been complete or not. Her husband says it has not been.

Before the parts were quite healed we noticed a very great improvement in tone, color and "nervousness."

I took the precaution to send this one early to the oculist. She discovered some astigmatism, and hyperopia and considerable muscular trouble. The patient lost her look of abject forlornness and had spells of actual liveliness and well-being within three weeks after the clitoris was freed, before the glasses were ordered, and during the progress of treatment to stretch the vagina, with the intent to learn whether the cervical canal held an added cause of sterility.

In less than six weeks she was a "new woman."

A clitoris that is "free" may be undeveloped, physiologically, and the mere act of being "freed" does not bestow upon it its full, marital, physiological function, and it cannot, therefore, be expected that normal conditions will suddenly come to pass.

Just as the nerve waste, from irritations, active and reflex, gradually undermines the health of the woman, the cessation of that waste and the proper distribution of the force saved, will accomplish a gradual restoration, permit of the normal development and consequent accession of happiness through sex health.

Montgomery speaks of pruritus as a symptom of all kinds of vulvitis. He gives a long list of causes, and finally includes a "form of pruritus in which the cause remains undetermined, . . . designated as an idiopathic pruritus." He does not suggest adherent prepuce as a possible cause, yet pruritus is an expression of extreme irritation in the very nerves that are irritated in phimosis in the female.

Translations.

Ureteral Fistula after Labor.—Küstner (Zentralbl. f. Gynäk.) reports a case of a woman, aged 30, who had passed through two labors. The forceps was applied at the first labor, and there was a rise of temperature during the puerperium. The second labor lasted for twenty-four hours, but ended spontaneously. High temperature was observed for a month. The patient five months after the labor complained that although she could pass urine voluntarily some more constantly came away involuntarily. Uretero-cervical fistula on the right side was diagnosed, and removal of the right kidney recommended. Küstner preferred a plastic operation. He adopted the method of intraperitoneal implantation of the right ureter into the bladder. The separation of the bladder from the cervix being effected without dividing the round ligaments, it was found that the ureter communicated laterally with the canal of the cervix. By catheterization from the bladder it was proved that the right ureter was impervious for two centimeters, or over three-quarters of an inch. Küstner for that reason did not attempt ureterorrhaphy, but divided the ureter above the fistula, and implanted it into the bladder. The right appendages were removed and the left Fallopian tube resected, its stump being pushed into the parametrium and covered over by sutures in the broad ligament. This resection was done to sterilize the patient. The operation proved successful.

Perils of Intrauterine Instruments.—Jakob (Zent. f. Gyn.), in a thesis on the dangers of intrauterine instrumental treatment, has collected 141 cases of perforation of the uterus and others of alleged sounding of the Fallopian tube. The perforations were caused by the curette in 73 cases, the sound in 19, the dilator in 16, the ovum forceps in 14, and the nozzle of a syringe in 6. In 64 cases the uterus had been gravid, 30 being abortions, 34 puerperal. In 12 cases instruments were used for metritis independent of gestation, in 7 for malignant growths, in 3 for removal of a polypus, and in 1 the uterus was perforated during the application of the tampon after abortion. In 5 cases of perforation the case was under treatment for retroflexion, in 4 a fibroid uterus was perforated. Rupture of the uterus during pregnancy occurred in 4 cases where there had previously been instrumental perforation. Jakob declares that he has collected 7 authentic cases where the sound entered the tube, 23 out of the 141 cases of perforation ended fatally, mostly through septic peritonitis, whilst in 77 no grave symptoms were

noted. When danger threatens the patient after an intrauterine wound, abdominal section, with or without extirpation of the damaged uterus, is indicated. In some cases the iodoform gauze tampon, or even opiates and application of ice, have proved sufficient. In 2 cases where spontaneous healing occurred abdominal section was necessary afterwards on account of extensive adhesions.

Chloride of Calcium as a Preventive Hemostatic.—Touber (Bull. et Mém. de la Soc. de Chir.) reports favorably of his experience of the results obtained from the use of chloride of calcium administered internally with the object of arresting or restraining bleeding in surgical operations. The mode of administration, he states, is very simple, this agent being very soluble in water and readily tolerated by the stomach. It is well to bear in mind, however, that it is incompatible with milk. Often two days before the date of operation, and always on the preceding day, the patient is supplied with a solution containing 3 grams of the chloride, of which fractional quantities are taken during the twenty-four hours, the last dose being used a few hours before the operation. The author has tried this method of hemostasis in operations for circumcision and for hypospadias; in internal urethrotomy, radical cure of hernia, hemorrhoids, varicocele, hydrocele, appendectomy, ingrowing toe-nail, skin grafting by Thiersch's method, and osseous suture. It is stated that, notwithstanding individual differences which occur, in spite of the use of chloride of calcium, a very large majority of the patients observed by the author benefited from the action of this agent, and that the coagulability of the blood was distinctly increased in all. There was never any necessity to interrupt the operation for more than a few seconds in order to clear the wound of blood, and in many instances the gauze pads were used for removing clots and not liquid blood. It was not found necessary to pack the wound after the operation in order to prevent recurrent bleeding. The number of buried ligatures was much reduced, and in some cases not a single vessel was tied. The author states that after the use of chloride of calcium he has never observed any post-operative hemorrhage and deep-seated collections of blood, even in parts such as the scrotum, penis, and perineum, in which accidents are likely to occur. In conclusion, the author gives it as his opinion that chloride of calcium administered internally acts as a harmless and simple preventive against free bleeding, and at the same time is not less efficient than other hemostatic agents—heat and gelatine, for instance—which either cause much local irritation or expose the patient to the risk of infection.

The Bladder in a Femoral Hernial Sac.—Abadie relates (Bull. et Mém. de la Soc. Anat. de Paris, July) a case of stran-

gulated femoral cystocele. A woman, aged 26, was admitted into a hospital at Montpellier for strangulated hernia. About twenty-four hours before admission she felt a swelling develop below the left groin, just as she was opening a trap-door in the ceiling of her room. The characteristic signs of strangulation developed, and an attempt at reduction proved a failure. Abadie operated in the absence of the resident medical officer. Just about as he was about to make the incision in the integuments the swelling suddenly increased in size. The urine had not been drawn off. The sac was dissected free and opened along its outer side. A coil of congested gut was discovered, and easily reduced after a little notching of Gimbernat's ligament. Further dissection of the sac was easy externally, but the wall seemed unaccountably thick on the inner side, so that dissection was completed with the scissors. The neck of the sac was ligatured and let go after division, so that it might reduce itself, but, instead of slipping back into the abdominal cavity, it remained outside, and some clear yellow fluid escaped. He drew forward the stump of the sac, and made a chain ligature a little higher, but more fluid escaped. Then it was found to issue from a cavity to the inner side of the sac. The operator's finger was passed into the cavity, which proved to be the bladder. The wound in that organ was closed with two sunken continuous sutures, the material of which is not specified in the report. The crural canal was repaired and closed; lastly, a retention catheter was passed into the bladder and kept there for a fortnight, being frequently withdrawn, cleaned and replaced. No complications ensued during convalescence. When the patient was seen a year later she was free from urinary troubles, and the cure of the hernia appeared perfect. Abadie notes that in this case there was no prevesical lipoma, seen as a rule in inguinal cystocele, but apparently unusual in the femoral variety of hernia of the bladder. In his case the hernia was new, developing when the patient strained the neighboring parts as she stood on a chair pulling at a skylight. The sac dragged the bladder out of the abdominal cavity. Abadie's patient was a female, the rule in femoral cystocele, but the hernia was on the left side, which is quite exceptional, indeed out of 19 such cases collected by Morin in 17 the sac occupied the right crural canal.

Placenta Previa in Multipara: Fatal Hemorrhage on Tenth Day.—Rudaux (Compt. Rend. de la Soc. d'Obstét. de Gyn. et de Péd. de Paris) reports this case where patient was a married laundress aged 41; she had borne eleven children to the same husband, all spontaneously, and all except the first at term. The twelfth pregnancy proceeded normally until the beginning of the ninth month. Characteristic hemorrhages set in, and a fortnight later, when labor had commenced with severe

bleeding, Rudaux turned and delivered. The fetus was dead; it weighed $6\frac{1}{4}$ lb.; the placenta and membranes, a little over 1 lb in weight, were extracted without difficulty. The patient's condition was very grave; subcutaneous injections of ether, caffeine, ergotine, and artificial serum were administered. There was, however, no trouble due to atony of the uterus. High temperature followed, with streptococcus poisoning, combated by serum treatment. On the eighth day hemorrhages set in, and 1 lb. of clot was expelled from the uterus, which was then packed with gauze; the patient became semicomatose. She rallied a little on the ninth day under appropriate treatment, but early on the tenth hemorrhage set in again, and the uterus expelled the tampon and some clots. Notwithstanding subcutaneous artificial serum injections and hot vaginal douches, the patient died a few hours after the expulsion of the tampon. The uterus and appendages showed no morbid appearances; the source of hemorrhage could not be discovered. The kidneys were normal, the spleen small and friable, and the liver pale and fatty.

Tuberculosis of Cervix Uteri.—Richelot (La Gynéc.) was consulted by a young woman, a midwife by profession, on account of uterine disease. She deceived him by concealing the fact that she had consulted others. According to palpation, there seemed to be cervical metritis; the uterus was bulky and movable, the fornices free. There was apparently bilateral laceration, and marked eversion of both lips of the os externum, which were much swollen and bore sinuous, grey-based, bleeding ulcers. There was none of the woody induration always to be felt around an advanced cancer of the cervix. A little swelling was discovered on a rib immediately below the left breast. A piece of the cervix was excised and examined by Cornil, who detected all the signs of tuberculous metritis. At the same time it transpired that the patient had been examined by several authorities who had been very uncertain about diagnosis. Vaginal hysterectomy was performed. The cervical tissue was very friable, and during the operation coexistence of cancer seemed probable as far as appearances went; the uterine cavity contained a proliferating growth of unfamiliar aspect. The appendages, thickened and non-adherent, were removed with the uterus. Characteristic tuberculous disease of the cervix was discovered widely disseminated; sections prepared by Cornil are figured by Richelot. On the other hand, the serous coat of the uterus and Fallopian tubes was quite free from tubercle, whilst tuberculous elements were detected in the muscular wall of the tube and uterus, all of recent development. Thus there could be no doubt that the primary seat of disease was the cervix. The main histological feature was the immunity of the uterine mucosa even in the cervical canal, on the

outer part of the vaginal portion it was invaded. The clinical interest lay in the difficulties of diagnosis experienced by several experts (Siredey, Bar, Labadie-Lagrave, and Cazin), and increased by deceit on the part of the patient.

Hemorrhages of Contorted Cysts of the Ovary.—Daniel (Rev. de Chir.) having recently had occasion to observe, in Tuffier's wards at the Beaujon Hospital, two cases of contortion or, in Lawson Tait's definition, axial rotation of ovarian tumor, complicated by hemorrhage, and having carefully analyzed a collection of forty-three records of this kind, has been led to the conclusion that this accidental association, on account of its diverse clinical and anatomical particularities, imparts to ovarian cyst with contorted pedicle special characters that often necessitate immediate operative treatment. In a summary of the results of an elaborate study of the complete evolution of hemorrhagic contorted cysts of the ovary, with all their pathological, clinical, and operative consequences, the author gives the following conclusions: Hemorrhage into a contorted cyst is, he states, a complication of fairly frequent occurrence, as it has been noted in nearly half the cases of axially-rotated pedicle. With the recognized varieties of colloid, dermoid, purulent and other cysts should, it is held, be included cysts with hemorrhagic contents. The symptoms of this last mentioned variety vary according to the abundance of the effusion, whether this be slight, recurrent, or sudden and profuse; and according to its situation whether parietal, intracystic, or mixed—that is to say, being both cystic and peritoneal. The complication, which can be readily diagnosed when severe effusion has set up symptoms of internal bleeding, is only revealed by accident in the course of some surgical operation when the loss of blood is but slight. The treatment indicated in every case of contorted ovarian cyst complicated by hemorrhage is the performance of laparotomy with the least possible delay. In the puerperal condition the same treatment should be applied.

Irreducible Shoulder Presentation.—Bué thinks that the name of "irreducible shoulder presentation" is preferable to the old one, "neglected shoulder," which cast a slur on the accoucheur. In *Le Nord Médical* he outlines the best methods of procedure when an irreducible shoulder presentation is met with. The gravid uterus near term is composed of the thick-walled body and the thin-walled lower segment; the line of junction of these two parts is called Bandl's ring. Two eventualities are possible in a shoulder presentation. In one case the fetus is situated below Bandl's ring in the lower segment, which is stretched nearly to rupturing; this condition is called the "sub-annular shoulder presentation." In the other case the uterine

body is firmly contracted upon the fetus, which, with the exception of a limb or two, is above Bandl's ring; this is called the "supra-annular shoulder presentation." In the former case the patient's pulse is quickened and her face expresses extreme fatigue. The abdomen has a bilobed appearance, with a horizontal furrow in the lower part, corresponding to Bandl's ring; the uterus is ready to rupture in its lower thin part. The finger in the vagina can easily reach the descended shoulder. In the second case the uterus is in tetanic contraction, causing the woman great pain. The abdomen is nearly oval, the uterus is movable and "floats" above the lower segment. On examination the lower segment is discovered, flaccid and hanging, and above it an orifice with hard, stretched, wooden edges, beyond which the finger touches some part of the fetus. In most cases, when internal version is contraindicated owing to the uterine retraction, the fetus is already dead, and so embryotomy is the evident course to be adopted.

In the subannular presentation embryotomy is relatively easy, the site of operation being within easy reach. Dubois's scissors and Tarnier's vertebral embryotome are the instruments recommended. The accoucheur must be on his guard against the threatening uterine rupture. All technique likely to put an excess of tension on the already over-distended lower segment must be discarded. In the supra-annular presentation the difficulties are greater. No fetal section must be attempted until the hand is within the cavity of the body shut off by the ring of contraction.

The technique then differs according as the fetal neck is accessible or no. When the neck is accessible, two fingers slightly parted are to be placed on the neck, and Dubois's scissors applied between them. Démelin's subcutaneous process is recommended. In one case of the author's an upper limb was very troublesome, and tracheotomy was first performed, and the embryotomy then proceeded with. In the supra-annular incarceration the neck is often not accessible, and the thorax often presents. There are several courses open to the accoucheur. Spondylotomy with complete fetal section through the thorax, with Dubois's scissors or Tarnier's embryotome; but this is a difficult and long proceeding, for the scissors do not bite, and the thorax slips away. Forcible turning or forcible evolution may be attempted when the fetus has been reduced in size by evisceration with or without urachiotomy. This method has the advantage of preserving the natural handle offered by the trunk for the extraction of the head. Forcible evolution differs little from forcible turning. This method was adopted by the author in the second of his cases after urachiotomy and evisceration had been performed.

Spurious Pancreatic Cysts.—Hartmann (*Revue de Gyn. et de Chir. Abdom.*) reports a case of cyst of the transverse mesocolon simulating pancreatic tumor. The patient was a woman aged thirty-six. A month before her admission into hospital she had been seized with vomiting, hiccough, epigastric pain, diarrhea, and a slight rise of temperature. These symptoms abated and a swelling could be felt in the right hypochondrium. It was bulky, and lay on the right below the liver. When an abdominal incision was made, a round fluctuating tumor was detected; the great omentum covered it in front. It lay under the greater curvature of the stomach towards the right and above the transverse colon. On puncture 1 3-4 pints of fluid came away. The walls of the cyst were 2-5 inch thick. They were fixed to the musculo-aponeurotic layer of the abdominal wound, and the cyst was drained. The tumor was either of the lymphatic or serous type. Hartmann was under the impression that the cyst was pancreatic until he detected its relations. He suspected that many so-called "pancreatic" cysts had been misinterpreted as to their origin. Potherat related another case of a cyst which lay in the left hypochondrium. He closely inspected its relations whilst enucleating it, and felt sure that it had not originated from the pancreas.

Spontaneous and Traumatic Separation of Fetal Head in Abortions.—Papanicol (*Monats. f. Geb. u. Gyn.*) reports two cases where the fetal head was separated and retained in abortion occurring about the middle of pregnancy. The first patient was twenty-five, and had borne one child; becoming pregnant again, she aborted at the fourth month without assistance; the fetal head was separated and remained in the uterine cavity. On the second day the patient was admitted into hospital and, whilst preparations were being made for the extraction of the head, it was expelled by a uterine contraction. The second patient, a primipara, miscarried at the fifth month, the feet presenting. The midwife performed extraction with such force that the head was torn off and retained. The uterus contracted very firmly on it, so that the finger could only be passed into its cavity with great difficulty. The fetal skull was perforated by means of a sound, and the opening widened until the cranial bones and brain could be removed by means of the finger. Then a second fetus was discovered, lying transversely; it was removed by turning. On the next day the placenta was removed manually. There was slight rise of temperature during the first two days, but afterwards the puerperium was satisfactory.

Malignant Retroperitoneal Lipoma.—Markovsky (*Ann. de Gyn. et d'Obstet.*) reports a case of sarcomatous fibrolipoma,

where, as is frequently the case, removal by operation proved fatal. The patient was forty-five years of age, and had noticed abdominal enlargement for three years; she complained of lancinating pains in the right inferior extremity, constipation, frequent desire to make water, dysmenorrhea, and emaciation. She had borne five children, the last (age not stated) was delivered prematurely during an attack of some kind of fever. The abdominal enlargement continued almost stationary for two years and predominated on the right side; then it took on rapid growth and distended the left side of the abdomen, which measured over 40 inches in circumference. The integuments were tense and shiny with dilated veins. The tumor could be defined on palpation as a painless, fixed, lobulated mass. The three lobes were of different consistence, but all solid, and there was resonance in front at certain points; the pelvic organs lay distinct from the tumor. Ott operated and was compelled to resect the ascending colon and cecum and to remove the right kidney, which was normal, but intimately connected with one of the three lobes. The tumor weighed 13 1-2 pounds. The enucleation was very difficult, owing to the friability of the tissues, but there was not much hemorrhage. The shock was severe, and, in spite of all precautions and measures to revive the patient, she died half an hour after the operation.

Modification in Technique of Lateral Intestinal Anastomosis.—Küster (Zentralbl. f. Chir.) describes a method of applying Murphy's button in lateral intestinal anastomoses which, as he has been convinced by frequent experience, tends to shorten and simplify the operation without impairing its safety. In a case of resection, before the ends of the two portions of divided intestine are closed by sutures, the half of a Murphy's button is slipped into the lumen of each and retained at some little distance from the cut extremity of the intestine by an assistant. The two open ends of the intestine having been closed by a double row of sutures, the surgeon presses the central column of each half of the button against the intestinal wall and causes it to protrude through a very small incision made over it from without inwards. The two portions are then brought together in the usual way, and, unless the intestinal opening be too large, without any application of sutures. Much time is thus gained, and the risks due to fecal effusion are abolished or considerably reduced.

Conglutination of Vagina and Os in Pregnancy.—Berczeller (Monats. f. Gynäk.) reports a case of cong lutination of the vagina observed during the pregnancy and another of cong lutination of the os externum observed during labor. A

woman, aged 21, consulted him for hemorrhages when in the third month of her first pregnancy. He found an apparently complete obstruction at the junction of the middle and upper third of the vagina, which felt like fairly firm cicatricial tissue. On inspection the opposite sides of the vaginal mucosa were seen to be adherent by a row of very thin bands of lymph separated by open gaps of about the size of pins' heads, as though the mucous membrane had been clumsily and loosely sewn up. Three weeks later the conglutination was much looser, it yielded on gentle pressure, and the cervix could easily be defined. Abortion followed, presumably as the result of the second examination, but the patient bore several children to term afterwards. The second patient was seen by Berczeller when in labour in the eighth month of her first pregnancy. The first stage had been unaccountably prolonged. He found a mass of the size of a Tangerine orange presenting; it was the cervix itself; the os appeared as a shallow pit. It was dilated with dressing forceps to a certain extent. The chorion was felt higher up strongly adherent to the cervical mucosa. It was detached, an incision about $\frac{1}{4}$ in. long was then made on each side of the os externum, and the membranes were ruptured. Within three hours spontaneous delivery occurred.

Hydronephrosis and Pyelitis Associated with Malformations of Uterus.—The following reports demonstrate how malformations of the uterus may cause renal obstruction, or at least be associated with other arrests of development in involving pressure on the ureters or kidney. Dionis du Séjour (*Bull. et Mém. de la Soc. Anat. de Paris*) writes observations on a case where hydronephrosis simulated ovarian cyst. The patient was 23 years old, and had been repeatedly pregnant, but there was no history of any puerperal or other pelvic disorder; the fluctuating tumor which filled the abdomen had been detected nearly five years previously. The urine contained no morbid elements. At the operation the tumor proved to be a hydro-nephrotic left kidney; the lower pole was partly invested by the broad ligament. It was removed; its contents consisted of about 13 pints of a clear, frothy, odorless, lemon-colored fluid. In searching the right lumbar region after the removal of the tumor, the operator to his great horror failed to find anything like a kidney. The uterus was of the unicorn type, the left cornu (which had been the seat of several pregnancies), tube, and ovary were well formed, as was the right ovary. The right Fallopian tube was absent, but in its place was a flattened cord, which ran from the lower part of the ovary down into the uterus at its junction with the cervix; the right round ligament was present. The cervix was single and not malformed. The patient died of anuria on the ninth day; not a drop of urine was passed or drawn off after the operation. No necropsy was per-

mitted, so that it could not be ascertained whether any trace of a right ureter existed.

Chirié and Fourmestraux (*L'Obstetrique*, March, 1907) published a case of gravid uterus bicornis with pyelitis on the non-gravid side, and icterus gravis associated with pregnancy. A woman in labor, delirious and deeply jaundiced, was admitted into hospital. The urine was turbid, dark-colored, scanty, and purulent. The cervix was already effaced and the membranes were intact; the breech presented. On the left of the gravid uterus was a firm tumor of the size of a fist connected with the uterus by a thick pedicle. It felt something like a fibromyoma. Notwithstanding the patient's desperate condition the fetus was expelled spontaneously. The hand could be passed through the cervical canal; towards the left was an empty cavity, whilst on the right was a cavity containing the placenta, which was forthwith extracted without flooding. Two days later the patient died comatose. The uterus was found to be of the bicornis unicollis type. The left cornu was lined by a decidua. Both ureters were dilated, especially the left, which was as thick as a man's forefinger. The kidneys were the seat of chronic tubal nephritis, and the left renal pelvis was much distended with pus. The liver was greatly hypertrophied and the seat of advanced fatty necrosis. The immediate cause of the fatal result was compression of the left ureter by the non-gravid cornu, which lay chiefly in the pelvis, dilatation of the renal pelvis and ascending infection. Kidney disease being already present, the fatal result was not surprising.

Catgut Suture for Fractured Patella.—The experience of modern surgery with regard to the suture of fractured patellæ with silver wire has recently led to an almost unanimous rejection of this method. In its place suture by means of catgut is now offered. Riedel (*Deut. med. Woch.*, December 13th, 1906) reports on eleven operations which he has carried out in this way. Three of the cases were old-standing fractures and eight were fresh ones. The three former cases include the case of a woman who fell down in January, 1900, fracturing her patella transversely. The fragments remained 2 cm. apart, in spite of strapping. In September, 1901, the leg had wasted considerably; the knee-joint could only be extended passively out of its fixed position of 150°. It could not be flexed further, and could not be extended actively. The upper patella fragment was adherent to the femur. On September 17th Riedel incised on each side of the joint longitudinally, chiseled the upper fragment from the femur, excised the scar tissue between the fragments, freshened up the fractured surfaces, and united them by means of three strong catgut sutures in a sagittal direction. The skin wound was left open. Bony union took place, the wasting was reduced, but complete extension and flexion

could not be carried out actively. The patient was able to walk well for hours without tiring. In the second case the union was also bony and in good position, and the functional result was good; while in the third case, although the bony union was present, the fragments had healed at a slight angle, and the functional result was correspondingly not quite perfect. The patient could, however, flex and extend the leg completely.

Riedel believes that the incisions should never be made over the patella, and that all forms of transverse incisions should also be avoided. The reason for this is that the patient should afterwards be able to flex his leg to an acute angle, and should be able to kneel easily. This result can be attained by making the incisions longitudinally at each side of the joint, and leaving the skin in front and below the patella untouched. These cases demonstrate that practically perfect anatomical and functional results can be obtained by this method. For some years past he has been endeavoring to obtain satisfactory results by means of subcutaneous operations. This has the disadvantage that as the fragments cannot be freshened up, the anatomical results are not nearly so ideal as those gained in the open method. Bony union mostly takes place after subcutaneous catgut suture, but in one case some tissue got interposed between the fragments and prevented the union. The advantages of the subcutaneous method are that the scar is small, and that the patient can walk about again after six weeks. The eight fresh fractures were dealt with by this method. Three of these cases gained full power of flexion and extension. In one the union was bony, in the second the fragments were lying together, and Riedel believes that bony union will take place in time, whilst in the third the fragments lie apart.

In two further cases he experienced a peculiar condition of perforation of the upper recess and hematoma between the skin and bone. Bony union took place in the first case, and in the second case the effect of the hematoma had not passed off sufficiently to determine the ultimate condition. In the last case he undertook the operation without having a proper needle to work with, and although full flexion and extension was regained, no bony union was achieved. The subcutaneous operation is carried out by making a small incision 2 cm. above the upper fragment. A long curved needle with a large eye is then passed behind the fragments, that is, between these and the femur, and after perforating the ligamentum patellæ is brought out through the skin. At this situation a small incision is then made. The needle thus lying in situ is threaded with four thin catgut threads of about 50 cm. length. The sutures are then drawn through. A less curved needle is then passed from the upper wound in front of the fragments, and this needle is threaded below with the four catgut ends, which are hanging out of the lower wound. The needle is then withdrawn, and the sutures are tightly drawn

upon and knotted with surgical knots. The knots thus lie above the patella and are sunken. It is especially advisable to make the upper incision high up. He considers that it would be easier to draw the upper fragment downwards, but he does not like to make the knots in the situation of the ligamentum patellæ. The whole operation only takes ten minutes to perform.

Prognosis of Bimalleolar Fractures.—Chaput (Bull. et Mém. de la Soc. de Chir. de Paris), who has recently studied the results of fractures of the lower ends of the tibia and fibula, insists on the frequent occurrence of deformity and impaired capacity of the limb after certain forms of such injuries, in spite of careful and apparently successful efforts at reduction, and of prolonged immobilization of the injured extremity. After proper treatment, which, the surgeon believes, has resulted in removal of deformity and consolidation of the osseous fragments, deviation of the foot from its normal relations will often follow. Permanent incapacity of the injured limb is, the author states, a very frequent result of fracture involving both malleoli. The external appearance of the seat of a fracture near the ankle, after removal of a plaster splint, is often misleading, as in many cases of what may have been regarded as a complete cure, partial luxation of the astragalus will be demonstrated by the x-ray. The prognosis of bimalleolar fracture is regarded as especially unfavorable in cases in which there is well-marked primary displacement, in which there is a free diastasis of the inferior tibio-peroneal articulation, and also when the injury is one of oblique supramalleolar fracture. In the discussion of this paper Tuffier concurred as to the frequent occurrence of secondary displacement of the fragments after apparent cure of a fracture near the ankle, and held that such displacement, which has very serious results in regard to the functional capacity of the limb and in most instances is quite incurable, is due to tardy consolidation, and indicates in the treatment of the fracture a much longer period of rest and retention than is usually allowed. Delbet also agreed in these views, and insisted on the necessity of extending the retentive treatment of the fractures in question over a period of forty days, and of keeping the patient in bed for ten or fifteen days after the removal of the splint.

Syphilitic Arthropathies.—L. Dominici (Il Policlin) describes two cases of syphilitic arthritis, and discusses the different forms which the disease takes. The two patients, a man aged 54 and a woman aged 35, both suffered from a polyarthritis of long duration and constantly varying course, with symmetrical localization in the larger joints, and involving also

in the younger patient a phalangophalangeal joint. The affected joints were distinctly swollen, of a soft fluctuating consistence, with very slight inflammatory symptoms, with exacerbation of spontaneous pain at night. In each case the integrity of the bones concerned in the articulation was shown by radiograms. The fluid extracted from the joints showed some red corpuscles and an excess of polynuclear leucocytes. Neither the *Spirocheta pallida* nor any other micro-organism could be demonstrated. Inoculations and culture experiments alike showed the liquid to be sterile. Inoculations of 2 mg. of tuberculin produced no reaction. In the first patient the evening temperatures reached 37°C., in the second 38.5°. In the first the disease was chronic from the first, in the second it was at first acute or sub-acute. Dominici establishes his diagnosis by a process of exclusion applied to all the other causes of chronic inflammation of joints. Apart from the method of exclusion, a diagnosis of syphilitic arthritis may be supported by the existence of other signs of syphilis, oscillation and intermittence of the symptoms, absolute or relative absence of pain, and reaction to antisyphilitic remedies, both mercury and iodides. Syphilis may cause vague pains in the joints as early as the appearance of the initial sore. In secondary syphilis, from a very early date there may be an acute polyarthritis of the large joints especially. Later on in the second period there may be a syphilitic hydrarthrosis, usually affecting the knees, but sometimes other joints also, painless, and often attaining considerable dimensions before the patient notices it, but yielding readily to specific treatment. Arthropathy is most common in the tertiary period, and may occur as long as twenty years after infection. This takes two forms. The less frequent affects the articulation primarily, and begins with a gummatous inflammation of the outer layer of the synovial membrane. The more severe and more frequent form begins with gummata in the bones forming the joint. These begin in the juxtaepiphyseal zone, and spread towards the cartilage, destroying the bone-like tuberculous myelitis. The process may be chronic at first, but may suddenly become acute. Active movements are painful from the first, passive movements only after the cartilage is attacked. The bone is thickened, and its articular surface may become irregular.

Surgical Treatment of Gastric Ulcer.—L. R. Rydygier, in discussing a paper at the German Congress of Surgery, states that, although the fact has been forgotten by some, twenty-five years ago he regarded gastric ulcer as an indication of resection, and that he was the first to perform this operation (Berl. klin. Woch.) In discussing the operative treatment, he finds that the choice lies between resection and gastro-enterostomy. A definite decision as to which of these is the better will only be

available when a large collection of cases will allow one to estimate how often perforation and hemorrhage occur after each. Theoretically, one may say that the procedure which offers the best chance of complete and permanent cure, and which leaves the parts most nearly to a normal condition, is resection. An objection has been raised to resection that when the ulcers are multiple the operation can only deal with one or two. This is true; but, as a rule, there is only one ulcer, and, when there are more than one, one certainly deals with the one which is threatening to do the most damage. Gastro-enterostomy aims at improving the drainage of the stomach and leaves the ulcer severely alone. When the ulcer has callous edges and callous base, it cannot be a matter of indifference whether one leaves it or not. Besides, the resection improves the drainage of the stomach by removing the ulcer and its obstructing edges and allows of a normal mixing of the gastric juices with the pancreatic secretion and with the bile at the proper place. Callous ulcers can heal after gastro-enterostomy; but, on the other hand, while the healing process is being waited for, perforation and hemorrhage may lead to the death of the patient. Statistics show that of 33 patients only 9 were cured by this operation. In many cases an attempt has been made to exclude cases of gastro-enterostomy for gastric ulcer where the death takes place from carcinoma at a later date. This is not fair, in the author's opinion, since it is accepted that a simple ulcer may undergo malignant degeneration, and therefore resection could have stepped in to prevent this unhappy after-result. With regard to the risk of operation, he points out that the mortality from resection is only about 3 per cent. when performed for a simple ulcer, as against 32 per cent. for malignant ulcer. Resection is a technically difficult operation, but experience will undoubtedly simplify the procedure. He gives some details of modifications which he has carried out, and which render the operation more simple. After the operation it is wise to warn the patient to be careful as to diet, as the secretory function of the stomach does not always return to a normal value. He therefore regards resection as the rational operation for gastric ulcer.

Phalanx Replaced by Decalcified Bone.—Gaignerot (Sem. Méd.) exhibited to the Anatomical and Physiological Society of Bordeaux a patient in whom one of the phalanges of the right hand, destroyed by suppuration, had been replaced by a piece of decalcified bone. A radiograph of the hand showed the new bone in good position, slightly thickened, but otherwise normal in appearance, and only gymnastic exercises were needed to restore all the movements of the finger.

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PREGNANCY COMPLICATED WITH TYPHOID FEVER: REPORT OF A CASE.*

BY JOHN PRENTICE RAND, M. D.

The occurrence of pregnancy with typhoid fever is not very common, and I will not weary you with any extended description of its history. The American Text-Book of Obstetrics says: "Typhoid fever during pregnancy severely complicates the mother's chances of convalescence from labor and frequently results in the death of the fetus." "In about two-thirds of the cases pregnancy is interrupted by the continued high temperature, hemorrhage in the endometrium or in membranes of the ovum itself, or by a depressed condition of the maternal circulation with asphyxiation of the child." The diagnosis presents no especial difficulty if the fever develops before parturition, but, if it does not, the condition is quite likely to be mistaken for puerperal sepsis, which it somewhat resembles. The treatment is to be conducted on the general lines of controlling the temperature and maintaining the patient's strength and, of course, if parturition occurs, to use every possible precaution against local infection. Infection, however, may take place from a lowered resistance and the general sys-

*Presented at the American Institute of Homeopathy, June, 1907.

temic condition of the patient, as the following case will show:

Patient, Mrs. A., primipara. Age about twenty-six; native of Nova Scotia; a perfectly healthy woman who hardly knew what sickness meant. The only discomfort she ever mentioned was an obstinate constipation, which apparently produced no ill effect. Conception took place under the best physiological condition possible, and everything was done that could be done to insure a normal pregnancy and birth.

Nothing wrong happened during the first seven months. I made an occasional examination of the urine with negative results. The date of parturition could be figured out exactly and all the necessary attendants were engaged for May 24, 1904. Both husband and wife were elate with joyful anticipations and even the "family doctor," who has a superstitious dread of anticipated pleasures, found nothing for fear.

Upon April 15, thirty-nine days before the expected confinement, the husband called at my office. He said his wife was not feeling very well and he wished that I would let him have something for her to take, did not think there was any necessity of my making her a visit. Accordingly I sent her what I thought she needed and gave the matter no further consideration.

The following Sunday he came in on his way to church to say that his wife was no better and at times seemed a little "out." I at once suspected some uremic condition, and told him I would go up and see her.

I found her carrying some fever but she seemed all right while I was there. There had been no epigastric pain nor was any edema present. I procured a sample of her urine, which showed nothing abnormal, and continued in daily attendance upon the case.

The fever and mental aberrations gradually increased and on the evening of April 20, word came from the patient's mother-in-law, who was an experienced nurse of most excellent judgment, that labor pains had begun to develop and that I had better call around as soon as convenient. I reached the house at about 9 p. m. The os was well dilated and the presenting head low down in the pelvis. The patient seemed in a dazed condition and made little or no outcries. At 2 o'clock the next morning, after an hour of tolerably hard pains, she gave birth to a male child which weighed five pounds and fifteen

ounces. The ordinary antiseptic precautions were maintained in the case. I made but few digital examinations before delivery of the child and none whatever after, as the placenta came easily with all the membranes intact. No uremic symptoms appeared at any time during labor, and at its conclusion I heaved a sigh of relief for I felt now, in some way, the condition would clear up. In this I was doomed to disappointment. Morning dawned without any consciousness of motherhood on the part of the patient or any recollection of the previous night's labor. The trained nurse, who had been engaged for the occasion, reached the ground that afternoon and it is due to her carefully kept records that I am able to make any report of the case. I shall not try to report all the medicines used, as I have lost my own memoranda, and the nurse's records only include such drugs as she had been told about. The medicines prescribed are of slight interest compared with the clinical history of the case, and I truly regret I did not write it up when my recollections were fresh.

Though the labor had been very easy it was followed by retention of urine which the nurse relieved and the patient slept well the latter part of the night. She complained, however, of aching in the joints and the abdomen was somewhat tympanitic. Next morning the temperature was $102\ 4\frac{1}{2}^{\circ}$. At 2.30 P. M. it had run up to $104\ 1\text{--}5^{\circ}$, and I gave her an intra-uterine douche of sterilized water, to which a little boric acid was added. Following the douche the temperature dropped to 103° and remained there the rest of the day. The next morning the temperature went 2-5 degrees lower, and nothing of note occurred until 3.45 P. M., when patient was awakened from sleep by a severe chill accompanied by violent tremors which lasted twelve minutes. She complained bitterly of pain in all the joints, especially the knees, ankles, feet, and wrists. The pulse at this time was good and strong, 108, but the temperature had gone up to 106° and I felt that the condition was very serious. Accordingly I asked for counsel and sent for Dr. G. R. Southwick of Boston, who came out, on the midnight train, and examined the patient between 3 and 4 Sunday morning. He explored the uterus very carefully but could find no evidence of any septic condition present: however, he washed it out with a 25-100 solution of hydrogen peroxide and introduced an iodoform suppository as a prophylactic

measure. The case seemed to him like one of typhoid infection but the only possible history of any exposure that could be obtained was that of eating lunch at a public restaurant in Springfield some three weeks before.

Following Dr. Southwick's visit the temperature dropped to 101 2-5° and the pulse to 86. It seemed as if she were really better. Dr. Southwick took a specimen of blood with him for examination by Dr. Watters at the Mass. Hom. Hospital, and the report confirmed his tentative diagnosis of typhoid fever the next day. Below is an outline of the report.

BLOOD EXAMINATION

Leucocytes apparently about 14,000 per cu. m.m.

Plasmodia malarix—none found.

Widal reaction—positive at dilutions 1-15 and 1-40.

Diagnosis—It is somewhat unusual to get a leucocytosis in typhoid fever unless there is some complication. The reaction was very pronounced and appeared very quickly.

Examined by W. H. Watters.

Monday, April 25, was a comfortable day, and Tuesday we started in with a temperature of only 100 4-5°. At 5 P. M. it was 103 2-5°. Patient complained of feeling very tired and the bladder was obliged to be catheterized. Wednesday was uneventful. Pulse remained of good character at 98, but the temperature rose to 104 4-5° in the axilla. At this time in addition to the carefully "selected remedy" I gave 5 grains of sulpho-carbolate of soda every 4 hours. We read but little of this drug now, but twenty years ago it was considered almost a specific for septicemia, and I have had very satisfactory results from its use.

Thursday she had another chill in the evening, and Friday at 4 A. M. a still harder one, which was followed by involuntary evacuations of the bowels.

At this time I gave her hypodermically 20 c.c. of Mulford's Antistreptococcus Serum, which Dr. Southwick had advised and continued with the sodium treatment as before.

That afternoon Dr. Southwick came out again to see the patient. We put her under ether, as she was too delirious to permit of any examination without, and he explored the womb very carefully a second time. Nothing of any importance was discovered or removed. The womb was washed out with sterile water followed by the peroxide of hydrogen, nearly full strength, and this by the iodoform suppository as on the previ-

ous visit. Malignant endocarditis was suspected at this time.

Saturday brought a reduction of the temperature to 101 2-5° and again we took a little courage. Whisky was administered freely as occasion seemed to require. In the P. M. the temperature rose to 102 3-5° and patient complained of a sore throat. Thus far patient had had no lucid intervals and was constantly moaning and crying aloud. Saturday P. M. brought on another chill, the temperature rising this time to 106 2-5°. Again I washed out the uterus with the peroxide solution and repeated the injections of the Antistreptococcus Serum.

The following day, knowing of the remarkable results obtained in puerperal fever by the intravenous use of formaldehyde, I stopped the sulpho-carbolate of soda and gave her a 5 grain of cystogen in its place. Cystogen, you know, contains a large per cent, of formaldehyde, and I hoped to disinfect the blood current in this way. Nothing that we did or attempted to do prevented another chill that P. M. The temperature rose to 106 1-5° and was followed by involuntary discharges and collapse.

The temperature was not taken until two hours after the chill began, which was the first available time anyone had to do it. Had the thermometer been tried earlier I presume it would have registered more. Monday, May 2, was more comfortable, the temperature being only 104 2-5°, and in the evening for a short time she was conscious, the first lucid interval she had shown since her confinement ten days before. Tuesday A. M. she grew very much excited over her delusions and required constant attention. The temperature was not high but, fearing another chill, I gave another dose of the serum as a preventive measure. Following the injection of the serum she slept nearly all the afternoon and her mind seemed clearer, but illusions of vision remained. That evening I reported her condition to Dr. Southwick, which elicited the following reply:

"DEAR DOCTOR: You are to be congratulated. Not every case of typhoid complicated by parturition turns out so well. It would seem as if the serum was valuable in helping us out, but there is to be considered that the time had come when a change in the ordinary course of the disease was at hand. There may have been some toxines absorbed from the placental site; the temporary improvement from the antiseptic treatment of the uterine cavity seems to confirm this opinion, and we all know that hemorrhagic endometritis is common in typhoid."

At 1 the next morning she had a voluntary micturition, at 9 the pulse was 78 and the temperature 100° , at noon the nervous symptoms returned and the temperature went up to 104° . At 7 that evening I gave her another dose of the serum and a high enema of normal salt solution. Thursday, May 5, fairly comfortable, serum repeated. Friday A. M. pulse was 72, temperature normal. Serum repeated, also the high enema. In the evening gave a nutrient enema which was retained. That night was uneventful.

Saturday had always been a bad day with her. At 9 A. M. she had a sudden drop of temperature of three degrees with cold face, clammy sweat, and collapse. Again I used the saline enema, again the serum injection, and at 2 P. M. another saline enema. We were hoping in some way to tide the patient over that Saturday without a pull-back, but in this we were not successful. Forty minutes later she had a most violent chill, which lasted three-quarters of an hour and was followed, like previous ones, by involuntary evacuations and collapse. Dr. H. C. Cheney of Palmer visited her with me in consultation at that time. The patient seemed to be dying but we kept on with our efforts to save her, and at 3.30 P. M. gave her a subcutaneous saline solution of a pint and one-half under the left breast. This was followed by some reaction; the temperature rose to $104.2-5^{\circ}$ and the pulse became fuller. At 8 that evening I repeated the saline injection under the other breast and remained at the house all night, as I had done several times before. There was little opportunity for rest; at 11 P. M. she had another sinking spell, which another subcutaneous saline relieved. Two hours later I gave her another, and five hours later another still.

It was evident for ten days that the patient had developed an endocarditis; during the chill of the day before an embolus had been detached from the inflamed endocardium and carried to the brain, producing complete hemiplegia upon the right side with total inability to swallow. All that forenoon she lay in an apparently dying state with the "death rattle" in her throat. At 2 P. M. the nurse telephoned me that the end was very near. I returned at once to the patient and found her breathing very shallow and almost cyanosed from the accumulation of mucus in the bronchi, which she could neither expectorate or swallow. With the help of the nurse and hus-

band we turned the patient on her chest and lowered her head until it nearly touched the floor; this allowed the mucus to gravitate from the mouth, and a large amount was gotten rid of in that way. The pulse became better, the cyanosis disappeared, and in a few hours she had so much improved that we took heart and gave her another subcutaneous saline; we also procured a tank of oxygen, which we administered freely. At 2 the next morning she had so far recovered from her paralysis as to drink a little water, and at 4.30 she drank some coffee and milk. Her husband could not give her up and insisted that we should continue our efforts to save her. Again we irrigated the womb and again we injected the serum. As she rallied a little from her previous desperate condition she became very restless and noisy, screaming at the top of her voice for hours together. Her eyes were rolled up so as to almost hide the iris. The mouth was parched and dry, the head thrown back, all the symptoms were those of intense cerebral disturbance. Tuesday brought no essential change in her condition. Wednesday I gave another dose of the serum. The nurse recorded a quiet day, mind clearer. Thursday the right leg which had been paralyzed since the Saturday before became swollen and very purple, for which we used alternate applications of hot and cold water.

Friday, May 13, I irrigated the uterus and used another injection of serum. Reaction had been established to some extent and the temperature went up to 102 3-5°. Saturday both were repeated; Sunday also the same, with the addition of another subcutaneous saline. Nutrient enemas were given as often as they could be absorbed. Monday I repeated the serum. Patient was very restless. Heart's action could only be maintained by hypodermics. Tuesday she remained as the day before. Wednesday I did not use the serum until late in the P. M. Thursday at 2 A. M. she had another chill. Friday at 9.30 A. M. she had another chill, which lasted fifty-five minutes, and at 11 P. M. of the same day still another. Saturday no record of temperature appears until 9.30 P. M., when it was normal and the pulse 80. It seemed as if things were doing better. She passed a tolerable night and slept considerably. No chill that day or until 11.30 P. M. of the next. Monday, in place of the cystogen tablets, I gave her 2 grains of quinine every four hours. We got through that day until 10 P. M. with-

out a chill. Tuesday she escaped the chill altogether, but it came at 12.30 Wednesday morning. Thursday she had an attack of vomiting at 3 A. M. and again at 6.45 P. M. At 8.30 of the same afternoon she had another embolus detached and carried to the brain, and she remained in a comatose condition ever after. At 11 P. M. of the same day I gave another subcutaneous saline, and the next evening still another. Saturday and Sunday she remained about the same. Monday was more restless. Tuesday, May 31, I tried to revive her with another saline and continued with the electricity and oxygen until 4 P. M., when she passed away.

A peculiar condition of the capillary circulation developed after the last attack of embolism which I have seldom observed and never in so marked degree, viz., little ecchymoses appeared all over the body like those found in genuine spotted fever. These were very marked and persisted after death, so much so that we powdered the face of the remains and covered it with a veil to prevent unpleasant observations and remarks. I wondered if the pathological condition was not akin to epidemic spotted fever and sought the opinion of Dr. Southwick, who had been my chief consultant on the case.

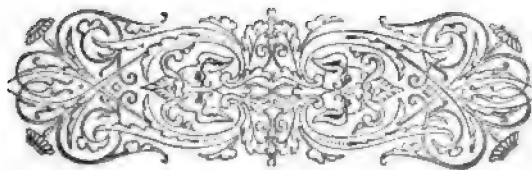
He said: "The spots you mention are not uncommon in malignant endocarditis. They are due to the condition of the patient and show a profound septic condition of the blood. Death is usually due to some condition secondary to the endocarditis, such as the embolus in this case. You have put up a good fight in a hopeless case, and I do not see how you could have prevented the result."

That the patient did not recover was surely no fault of the nurse. For thirty-nine days she was constantly on duty, refusing any assistance until nearly the end, and then carrying the whole burden of responsibility. I do not believe she got two hours of continuous sleep during the whole period. I know you will be interested to learn that the babe lived, and is now a bright little fellow, full of mischief.

As I look back over the case a few things invite attention. (1) The extraordinary vitality of the patient, which was able to withstand such a high temperature and repeated chills. Could we have prevented the formation of emboli I believe she would have recovered. (2) The extreme malignancy of the disease. (3) The absolute improbability that that infection

came from the parturient canal, there being no lacerations or abrasions of any kind whatever. (4) The large amount of Antistreptococcus Serum injected, in all fourteen packages of 20 c.c. each, without an abscess following the puncture of the needle or a bad symptom of any kind that could be traced to it. I doubt if there is a case on record that ever took so much. The serum at one time seemed to be the only thing that had any influence on the condition. Following the injection of the serum she would go for two days in comparative comfort and then she would have a chill. It was with the hope of preventing these seizures that the bulk of the serum was used. (5) The very satisfactory results from the subcutaneous use of the normal saline solution, which for ten times tided the patient over a collapse. About fifteen pints were injected in all, and in only a single instance was there any suppuration from its use. I believe the lives of many patients could be saved by its intelligent use, and it doesn't require an expert surgeon to administer it either.

I know this paper will be subject to criticism if not to ridicule, by the ultra-homeopaths who never make use of anything but the attenuated remedy and who, according to their own confessions, "never lose a curable case." I wish I had their sublime credulity but, alas! I have not. Patients die and patients recover, in spite of my treatment, and often when I try the hardest failure results.



PROCIDENTIA UTERI.

BY H. F. BIGGAR, M. D., LL. D.

Hernia of the pelvic floor has been a *bête noir* to the gynecologist. Many methods have been devised to restore or relieve the condition, but no one method has proven permanently satisfactory. The endeavor is to prevent vaginal hernia after the extirpation of the uterus and adnexa.

The condition is best described as a reducible hernia through the pelvic floor, the sac being the inverted vagina, containing besides the uterus, the tubes, the ovaries, the bladder, and intestines.

Procidentia uteri is divided in two classes: (a) partial, where the cervix reaches the external part, and (b) complete, when the whole uterus protrudes through the introitus vaginæ, bringing down the adjacent organs.

When the uterus presents at the introitus vaginæ or when the cervix presents beyond the introitus a vaginal hysterectomy with anterior and posterior colporrhaphy and perineorrhaphy is indicated, or if the ventral fixation is the method decided upon and the cervix is found to be torn or elongated, amputate the cervix, thus removing the wedge that tends to dilate and push downwards the soft parts, and then complete the plastic surgery of the vagina.

In surgical treatment of this order much ingenuity has been displayed. Various operations on the anterior and posterior of the vaginal wall, as well as the removal of the uterus in whole or in part have been recommended, but unfortunately without satisfactory results. These disappointing results have been due in most instances to the operators failing to recognize the fact that the vaginal wall is merely a hernial sac containing the uterus, tubes, ovaries, bladder, and rectum, and that consequently the simple repair of the external perineal body, the removal of a larger or smaller portion of the vaginal wall, or even the removal of the uterus itself, would not correct the most essential cause of the difficulty, namely: the relaxation of the normal pelvic floor which allows the abnormal position of the small intestines and bladder.

The writer has observed in a few cases that had been previously operated, by simple hysterectomy, for procidentia, that

the protrusion or tumor was larger than before. The reason for this has been that by the removal of the uterus the advantage of support of the round and broad ligaments has been greatly impaired if not totally destroyed.

Among the main factors that contribute in causing the condition may be mentioned congenital and acquired deformed pelves, especially in malformations due to Pott's disease of the spine, ill health, senility, the retroversions that are antecedent to prolapsus, pelvic exudates, subinvolutions, chronic metritis, intra- or extra-abdominal pressure, obstruction to return of blood causing varicosities—laceration of the subcutaneous or submucous separation of the muscular fibers of the perineum, cervical laceration with hypertrophies, constipation, and distention of the bladder, too tight obstetric binder, the use of forceps without previous thorough dilatation of the cervix, and prolonged efforts of expulsion with the child's head at the perineum, too strenuous methods in the Credé method of expressing the placenta, not proper care following the birth of a child, corsets and tight bands about the waist in girls, in their teens. Severe physical exercise or exertion certainly has its limitations.

What are the causes of the failure of the many devices for correcting a case of procidentia? Up to date no one method has proved satisfactory; if so, then why are others being constantly introduced? Every case is virtually a law unto itself, yet the same method for apparently similar conditions has not cured. Many of the methods are excellent and beyond question would prove efficient if certain conditions are observed pre- and post-operative.

Like many operations for other troubles the morbidity unfortunately is great, even though the patient recovers from the operation and is pronounced cured upon leaving the hospital.

We have not the ideal operation because we neglect to care for the conditions that are necessary for success. Many methods are good, but must necessarily fail if weak spots are not strengthened before the operation.

The reasons for failure are: First, the patient is not in proper condition for the operation; second, the causes leading up to the procidentia are overlooked at the time of the operation; third, the patient is not properly cared for after the operation.

How shall we prepare the patient—(a) by restoring a weakened constitution, and if anemic, improve the condition—(b) if muscular tone is lacking, restore—(c) if constipated, relieve—(d) if abdominal wall be flabby make it strong.

These are some of the requisites before operation. The post-operative care consists in proper support, proper position, and proper rest to recuperate.

Much greater care is necessary than in any other abdominal work and a much longer rest is needed for convalescence.

In procidentia there is always an accompanying cystocele and the operation of simple hysterectomy still leaves the bladder sagging, which will by hydrostatic pressure drag the upper abdominal floor (the peritoneum) into the vaginal cul-de-sac.

Among the most recent methods in which the author has been most successful is the following: by the lower route the vaginal wall is divided from the uterus, and the peritoneal cavity entered anteriorly and posteriorly between the bladder and rectum. The uterus is then either drawn down or turned upon its horizontal axis, so as to expose the round ligaments. These are clamped on the proximal side close to the organ and divided, leaving the forceps attached to the ligaments. The hysterectomy is then completed as usual, and the peritoneum closed, leaving the round ligaments with forceps attached exposed in the vagina. The lowest point of the base of the bladder is now stitched by mattress suture to the round ligaments, taut so that they will lift the sagging viscus and prevent the accumulation of urine below the level of the urethra. The vaginal wall is then closed and the operation completed. By this method the bladder is turned forward upon its base so that the pressure of the water rests upon the pubes instead of dragging into the vagina—practically an artificial vesicle anteversion.

Another operation in vogue with some surgeons is by the abdominal route: The uterus which, in elderly women, is usually small, is found and pulled upward by the aid of bullet forceps, also drawing the vaginal wall upwards. When this has been accomplished a needle armed with large-sized absorbable suture is passed through the fibers of the uterus at the point of its attachment to the round ligament and carried down the broad ligament in the form of a purse-string and back again, the needle being finally made to emerge at about the point of entrance, so that, when the two ends of the suture are drawn upon

the broad ligament on that side, it is folded up and brought together, thus doing away with its excessive length and giving the uterus a new point of attachment near the insertion of this ligament at the pelvic brim.

Of all operations on round ligaments the classic internal Alexander-Adams is the best and only effective in the early stage to overcome retrodeviation.

The repair of the perineum and the methods are many but that which the writer believes the very best is the one which approximates the separate tissues and impaired muscles together by series of buried sutures, in their natural relationship.

Then the prolapsus of the bladder has also many methods for restoring but as yet none has proved entirely satisfactory. The strengthening of the raphe by the buried rows of the saddler's stitch is of value but the writer is inclined to believe that the removal of the mucous tissue is faulty in this, that the muscles and cellular structures are so weakened by being stretched that the continued hydrostatic pressure soon causes it to return in the same former condition. In view of this why not remove a section of the wall of the base of the bladder, when the normal firmness will be restored. The procedure has had its admirers, but perhaps the method is too recent to accurately judge of its ultimate merits.

There is also danger of injury to the urethral orifices. A case of interest: A patient from eastern New York consulted the writer with a view of having the uterus removed for carcinoma, presenting the following history: Four years previous a Hodges large-size pessary was inserted for procidentia; three years after the placing of the pessary she was examined by a rival physician who diagnosed a cancer due to the wearing of the pessary, which had not been removed since first inserted, and which he did not remove, and encouraged the patient to sue her former physician who inserted the pessary for malpractice, which she did and the poor doctor was mulcted for \$600. Upon examination the writer found an embedded pessary which with difficulty was dug out of the excessive granulations, the pessary was then divided with bone forceps in halves and removed. Her recovery was rapid and the granular tissue disappeared. Strange verdict!

The following are some of the methods adopted for temporarily relieving procidentia uteri:

A pessary was devised by a distinguished surgeon shaped like a capital letter U in which the foundation or support was the sphincter ani—rectal end shaped like an acorn and the vaginal part having a ring at right angles fixed to the end. This was undoubtedly thoroughly impracticable, for in defecating its removal was necessary and then necessitated a readjustment.

This pessary with some others as absurd in device are among the curios of the writer's gynecological cabinet.

Another is a Goose-neck pessary, the external end fastened to an abdominal belt and inserted within the vagina with a cup at the end supporting the cervix. Another, the stem pessary, on one end a cup for holding the cervix the other external to the introitus vaginae, with parallel tubes end through which rubber cords are passed and attached anteriorly and posteriorly to an abdominal girdle.

The double rubber ring of Graber is highly recommended by those who have used it.

The method adopted by a physician in the Chelsea Hospital for Women in London, is by injecting into the broad ligaments the following solution:

R Sulph. Quinine	grs. 12
Dist. Water	m. 30
Dil. Sulph. Acid	m. 30

Using 30 minims to each injection for each ligament.

The lymph, it is stated, becomes fibrous tissue. The doctor allows an interval of three weeks between injections, but claims that generally once is sufficient, and records that in 93 cases 80 per cent. were completely relieved of the prolapse with only one failure, and that was in a patient whose age was seventy-four—that 6 of the restored women have had children with no prolapse following. There was recurrence of the prolapse in three cases (three years intervening after the operation), and one of the three had a return of the prolapse due to severe coughing from a severe bronchitis that existed for a period of five months.

A few weeks ago a patient, æt. seventy, consulted the writer, who has been wearing a globe glass pessary for the past nine years with complete comfort, that had never been removed since first inserted. Strange that no irritation had followed. Its proper adjustment and equal distribution of pressure, with constant and thorough vaginal douches, no doubt prevented

mucous ulceration. This is severely in contrast to the Hodge pessary, where the four sharp angles and misfit were the cause of the prolific granulation of the New York patient just related.

Dr. T. A. Emmet is authority for the treatment by a Southern physician who successfully cures procidentia uteri by keeping the patient in a sling in a marked knee-chest position and filling the vagina once a day with a solution of white oak bark—the time required for the cure is usually four weeks.

Another interesting case: A German woman living in Sandusky, Ohio, under the care of the late Dr. F. W. Morley, of the same city, was for many years an intense sufferer from tic douloureux. Through correspondence it was decided to operate at her home, and that Horsley's intradural operation on the trifacial nerve was the necessary operation. Dr. E. H. Pratt, the late Dr. Nathaniel Schneider, W. E. Wells accompanied the writer to Sandusky and we were there joined by the late Dr. F. W. Morley and Dr. Edwin Gillard. This was the writer's first interview with the patient. As soon as we entered the room Dr. Pratt, who had not before seen the patient, exclaimed, "Dr. Biggar, I'll wager you \$1000 that this woman has procidentia uteri and that a hysterectomy will cure the tic douloureux." The examination verified the correctness of his diagnosis—the uterus was removed by Dr. Pratt, and his prognosis proved correct, for the tic douloureux was permanently cured.

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THE INDICATIONS FOR CYSTOSCOPY.*

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My effort will be largely a practical one, since I will endeavor to cystoscope one or more patients, thus illustrating my brief remarks. I say "brief remarks," because a paper dealing exhaustively with the subject of cystoscopy would consume a great deal of time, and, perforce, contain a great deal which would possibly not be interesting to general practitioners, inasmuch as such should include not only a history of the subject but also a description of the various methods in use.

The art of visually examining the bladder by means of an instrument introduced through the urethra owes its popularity to the untiring efforts of the late Nitze, and to-day no accurate diagnosis of either kidney or bladder lesions can be made without its employment. Personally, where it is possible, I cystoscope every patient (the exceptions to which I shall speak of later), where there is any doubt as to the exact diagnosis. Of course, there are usually sufficient symptoms to enable one with fair diagnostic acumen to differentiate cystitis from pyelitis. But who can tell positively which kidney is diseased without inspection of the ureter, or, perhaps, catheterization of the ureters; or who can tell definitely whether cystitis is due to stone or tumor, or detect the exact location of ulcers, tubercles, or other pathological conditions, unless by actual inspection? I think you will all see that without such accuracy is impossible; therefore, this establishes its imperative necessity. There are very few clinical features of pathological conditions which will prevent a thorough cystoscopic examination; such are confined to the more acute inflammations of the bladder. Even here, if imperative, the operation may be made by preparing the bladder by irrigations with a saturated solution of boracic acid. It should be remembered, however, that hyper-acute symptoms clearly centered on the bladder contraindicate its performance. The indications for cystoscopy are then found when it becomes necessary not only to differentiate between bladder and kidney

*A demonstration before the West Jersey Homeopathic Medical Society, Camden, N. J., May 15, 1907.

lesions, but also to determine accurately their exact location.

Let me illustrate by reciting a short history of two cases, occurring in the practice of Dr. Grumbrecht, a member of this Society.

G. S., a laborer, fell from the deck of a vessel to its hold, injuring his back; shortly afterwards he voided bloody urine constantly for twenty days, during which time he was confined in a Philadelphia hospital. Without any local treatment or operative interference the bleeding stopped, and there was no recurrence for forty days, when suddenly, apparently without cause, it recurred and continued for ten days uninterruptedly. The patient passed long, thin clots. When I saw him he was in a very weak and alarming condition. The local symptoms were referable to both kidneys, but especially the right one. Cystoscopy showed the left ureteral orifice normal, and the right ureteral orifice swollen, congested, and spurting blood,—this gradually obstructing the view. I catheterized the right ureter with a great deal of difficulty by reason of obstruction due to clots, and succeeded in irrigating the pelvis of the kidney. This, together with internal medication of cantharis and berberis succeeded, within a few days, in allaying the hemorrhage. He has had no bleeding since. Two months have elapsed since the examination. Should the bleeding recur, we would, I think, be justified in incising the kidney, with the hope of permanently removing the cause of the hemorrhage.

Mrs. A. R., age twenty-seven, for the past two years had symptoms pointing to stone in the right kidney. She had attacks of severe characteristic pain on the right side, extending along the ureter, occurring several times monthly. The urine was cloudy and contained pus and blood; cystoscopy showed the bladder normal in every particular except slight congestion at the trigone. The right ureteral orifice was spherical and gaping. It was catheterized. No difficulty was encountered until the pelvis of the kidney was entered, when the catheter curled on itself. Bierhoff's Pelvic Distention Test for the Detection of Stone in the Kidney was then made, with positive results. The test is as follows:

A catheter is inserted into the ureter of the suspected side, and passed up until its eye lies within the pelvic orifice. (It is necessary to employ as large a catheter as will comfortably enter the ureteral orifice.) Having assured ourselves through

the nature of the flow of the urine that the eye of the catheter lies within the renal pelvis, we begin to distend the pelvis by injecting sterilized boracic acid solution, up to such a point that the patient complains of pain in the renal region. This quantity usually amounts to about 30 c.c. The fluid is now allowed to flow off, and the maneuver is repeated until in all about 250 or 300 c.c. have been employed. In the presence of a calculus the maneuver is followed in twenty-four hours by a distinct hematuria, at times so pronounced as to be clearly visible to the naked eye. The urine should not, however, be examined for the presence of blood until from twelve to twenty-four hours have elapsed, so that the mild bleeding resulting from the unavoidable slight traumatism by the catheter shall have had a chance to cease.

Blood found in the urine after this test has invariably revealed to me the presence of a renal calculus, even where the X-ray had given a negative result in the hands of experts, and in no case in which a negative result was obtained by means of the pelvic distention test did either the X-ray or an operation reveal the presence of a stone.

The hematuria which results from the pelvic distention test, in the presence of calculus, is due to the dislodgment and movement of the calculus by the stream of fluid, and, as a result of this dislodgment, blood results from traumatism of the pelvic membrane.

The urine showed blood, pus, uric acid, epithelium, and casts. An X-ray examination confirmed the diagnosis of stone. In passing I wish to say that, while I am a firm believer in this test for calculus, I always advise X-ray examinations, since by such means (especially if a positive picture is seen) any element of doubt may be dispelled. In fact, a proposed operation on the kidney should never be made until every possible diagnostic means at our disposal is employed for an accurate diagnosis. The left ureter was catheterized, and the urine examined and found normal. I removed the stone, and the patient left the hospital thirty-six days after operation, since which time she has had no return of the symptoms.

The third case illustrates a bladder condition. This patient I have here to-day, and will present him for examination.

H. C., age thirty-eight, consulted me August 4, 1906, presenting this history: Two years ago he had a fall on the pave-

ment which caused incontinence of urine and feces, likewise inability to walk without crutches; he became progressively worse. During these two years he consulted the most eminent neurologists of Philadelphia, and was exhibited before many clinics. Their diagnosis was transverse myelitis, with progressive muscular atrophy. When I examined him the urinary symptoms were the most distressing, he had been leading a catheter life for a year. The urine showed pus, free blood, and all the elements of a foul cystitis. Cystoscopy showed several calculi in a pouch behind the prostate. On September 15 I removed these stones by suprapubic cystotomy, and the patient made an uneventful recovery. The urine is now clear, and is passed naturally. His gait is so much improved that he goes without a cane or any mechanical support, except when taking long walks. My diagnosis was, pressure neuritis. To recapitulate, then, the indications for cystoscopy are, broadly speaking, to differentiate between kidney and bladder disease, and to locate definitely the areas or parts involved. For obvious reasons I will not attempt to describe what one may see while making a visual examination of the bladder, but will content myself by saying that one may inspect the summit, sphincter, sides, trigone, and region about the prostate and the ureteral orifices, detecting probably calculi, foreign bodies, tumors, tubercular or gonorrheal ulcers, and areas of recent or old cystitis. The ureteral orifices may likewise be inspected, thus detecting their size, shape, and action, watching the urine as it spurts from their orifices, noticing any abnormalities, timing their systoles and diastole, detecting the exact source of pus or blood, and if necessary catheterizing them, either for diagnostic or therapeutic purposes.

In this paper I have purposely omitted any minute discussion concerning ureteral catheterization, or ureteral therapy, but I have confined myself at this time merely to the indications for visual examination of the bladder. The art, however, is not without its therapeutic possibilities, since by means of the operating cystoscope one may remove portions of tumor, preserving such for microscopic examination,—the therapy for such to be determined later. Also, by the cystoscope of Brown or Bransford Lewis, topical applications may be made to localized bladder areas, the seat of ulceration, or foreign bodies such as small stones may be crushed. The instrument which

I use is made by Lowenstein, after Nitze's pattern. I will not enter into a technical description of it, since such may be obtained from any up-to-date work on genito-urinary diseases; but will simply say that during the past five years, in both hospital and private practice, I have employed every recognized method of cystoscopy,—(this includes direct and indirect vision cystoscopy, with both air and fluid dilatation of the bladder),—and, after several hundred examinations, I prefer the indirect, or Nitze, for examination of the bladder, and for ureteral catheterization, both in the male and the female. It must not be imagined that the others are of no value; they are especially so for female work or for removal of free bodies within the bladder—but, in my opinion, the Nitze is ideal, because by reason of its construction it permits of inspection of every part of the bladder of both sexes,—a thing not possible with any other instrument. The technic is very simple.

Any ordinary office or household table, of sufficient length, will answer for the patient to lie upon. The table I prefer is one which has foot-stirrups and admits of a semi-Trendelenburg position. All clothing which constricts the waist and knees must be removed. Occasionally one must have several days' preparation for the operation; for instance, urethral tolerance may in very nervous individuals have to be acquired, or very purulent urine may necessitate several days of bladder irrigation, before satisfactory results may be expected from examination. The patient being placed in position, the parts must be rendered as aseptic as possible; all instruments, too, must be rendered aseptic. Since we cannot sterilize cystoscopes by boiling or other methods, we must content ourselves with standing them in a weak solution of carbolic acid, and immediately before using wipe off with alcohol—this renders them decently clean. The following essentials are necessary for the operation:

1. The urethra must have a caliber of at least 23 F.
2. The bladder must have a capacity of 5 ounces (although I have viewed it when the capacity is much less,—about 3 ounces).
3. There must be a clear medium.

The first requirement precludes stricture and hypertrophy of the prostate or other tumor, the second a very much contracted bladder, the third calls for numerous bladder irriga-

tions. It is very necessary that the electrical apparatus be in perfect order, otherwise embarrassment will surely follow. The patient is placed in position, a soft rubber catheter is introduced within the bladder, and the urine withdrawn slowly. If it be cloudy, the bladder must be irrigated with a 3 per cent. solution of boracic acid, until the reflex fluid is clear. Five ounces must then be left *in situ*. I never use any general or local anesthetic, except in very nervous individuals or where there exist acute conditions, in which event I prefer a general anesthetic. The cystoscope, lubricated with glycerine, is passed into the bladder, after the manner of introducing a sound,—the examiner, being seated at the foot of the table, holds the cystoscope with the left hand, and manipulates it, if necessary, with the right. The light is then turned on. By means of the so-called cold-lamp a high degree of light may be obtained, and the instrument held in the bladder thirty minutes or more without causing any discomfort resulting from heat. The summit of the bladder is first examined; next the instrument is drawn toward the operator, so that its beak lies just beyond the sphincteric margin.

Here we may inspect the sphincter. Next, by pushing the instrument further into the bladder and rotating slowly, either side may be examined. By turning the beak of the instrument downward, the base is brought into view. Here, by drawing the instrument toward the operator, one sees that triangular space known as the trigone, recognized by its pale color. By rotating the instrument along its upper boundary the ureteral orifices may be seen. They lie about two inches apart from each other. They resemble a cone, with slit-like openings. After viewing them for thirty seconds one may detect urine spurting from them. Again by drawing the instrument toward the examiner the prostate may be fairly well examined. Notes are made of the condition seen; the light is turned off, the instrument withdrawn, and the bladder thoroughly irrigated with a 1-4000 solution of nitrate of silver.

I have not attempted to give a description of the normal or pathological bladder, since nothing can be gained thereby. I have brought a few plates illustrating both normal and pathological conditions, but complete satisfaction may be obtained only through long and arduous practice with the cystoscope.

MATERNAL INFLUENCES.*

BY BELLE GURNEY, M. D.

I wish to call attention to some clinical observations of influences and apparent results on mother and child during parturition.

Little did I realize, however, when selecting this subject the difficulties I would encounter; the more I tried to find something tangible and absolutely certain as to cause and effect, the more uncertain I became.

We all know that to insure good crops, we must have fertile soil, good seed, sufficient cultivation, and freedom from parasites, with sufficient moisture to insure and promote a healthy growth.

When it comes to reproducing the human race any old diseased conditions of both male and female are allowed to come in contact one with the other, conception takes place, nothing is done for the diseased product of sensuality, and what is the result? Would it be possible to have healthy offspring?

They might seem so for a while, but the first thing that comes along to upset their equilibriums down they go, a victim to their inherited tendencies. It may be the same disease, or it may be some of the febrile onslaughts of childhood, that opens up the volcano of latent disease, which may result in nervous disorders, mental impairment, deafness, loss of vision, etc. It may be a severe cold which is the beginning of tuberculosis. In the female any of the irregularities of puberty, menstrual derangements, and barrenness. Do you suggest prohibiting marriage of unsound persons? This would only make a bad matter worse, as the sexual instinct is so strong that there would be many homeless children, the product of unlawful co-habitations.

The sexual appetite cannot be entirely controlled, and if only perfectly sound people were allowed this indulgence then the blessings of parenthood would be denied the majority.

The only alternative then is to educate the people as to their responsibilities not only as regards themselves and their children, but future generations.

People contemplating marriage should put themselves in as

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good physical condition as possible before assuming the marital relations.

It should be the duty of the physician to instruct the parents of growing families of their responsibility and ability to eradicate in toto or in part the effects of indiscretions of former generations.

We cannot relieve the ills of the present generation by treating the grandparents, but we can remember we are treating the grandparents of future generations.

If those under our care cannot or will not wait for proper physical conditions, then instruct them as to sexual hygiene as a second-best arrangement; even then accidents may happen and dire results follow.

The majority of young people who take upon themselves marital responsibilities have no idea of their personal influence on the health of their unborn children.

I was called to attend a woman in labor, the head already presenting when I arrived; to all appearance she was healthy and the labor normal. In a few days the milk dried up, and before we hardly realized there was anything serious the matter the babe withered and died in spite of all our efforts.

Several months later I learned the mother was an epileptic and had frequent attacks during her pregnancy. Her mind became so impaired that she was sent to a sanitarium.

It was a blessing to both parents and child that a Higher Power in His mercy saw fit to release the spirit from such an inheritance.

A girl nineteen years old, epileptic, was married, aborted, and died of sepsis in a few months after marriage.

The mother of the two following cases was tubercular owing to suppression of menses when sixteen, by getting feet wet, and was not re-established for one year.

One daughter was married at eighteen, tubercular also, due to exposure after measles, two years later was delivered of an apparently healthy child; then she just seemed to fade away, and in two years the struggle ended. The child had obstinate enuresis until puberty.

When she was about seven adenoids developed and were not removed until she was twelve; then it was too late to restore her hearing, which had been partially destroyed owing to the neglected growths.

A girl of seventeen, an older sister of the former, seemingly healthy except severe dysmenorrhea, was married, from beginning of first pregnancy she was almost an invalid, with no improvement during child-bearing period. The husband had gonorrhea when nineteen, attacks of erysipelas, and history of kidney trouble in the family.

He was of a roving disposition, never satisfied any place. When a child, if sent on an errand, the next they heard of him he might be in some distant city; just seemed possessed to flip a train and go wherever it took him. He never drank or did vicious things. Later in life settled down to a quiet business life. Died at the age of forty of Bright's Disease. The first child of this union, a son, had hydrocephalus, from which he recovered, but was of an intensely nervous disposition. He developed the same morbid tendencies for travel but was less moral than the father. When twenty-six he had la grippe resulting in tuberculosis and kidney complications; in three short months the candle had burned itself out, and the worse than wasted life was ended.

The second, a daughter, was conceived and carried under very delightful surroundings and in good social conditions. This was a lovely babe, developed into a beautiful young woman with an angelic disposition, always making others happy, brought sunshine wherever she went, was artistic in her taste. At twenty-three she was overtaken with an incurable malady, and paid the price of her inheritance with her life.

The third, a son, was carried under less favorable circumstances. The mother had a severe cough all during the pregnancy. At the seventh month of the term an intimate friend died, and the pregnant woman was completely absorbed and fascinated by the beautiful wax-like appearance of the dead woman's hands. She was oblivious to everything else until they almost carried her away. The child was born with the most beautiful wax-like hands, and though playing as the other children his hands were never rough or chapped and were the envy of the girls. During the last six weeks of the period the husband was obliged to be away and her whole soul cried out day and night for the affection, caresses, and care of the absent husband. Here again was the imprint on the child, he showed the same marked longing for affections and caresses and was lavish in the bestowal of his love.

Before this conception the father had settled down and was a steady business man. This son exhibited none of the restless disposition of the father or first son.

Each of the three children partook of the conditions and surroundings at time of fecundation and gestation.

There is great anxiety for this third child, as the others died before thirty, and as he is only twenty-three there is a constant question as to what time may bring forth.

A babe born of a mother with Bright's disease died in a few days with no warning whatever, although seemingly in good condition; just ceased breathing, less than a half hour after nursing.

A lady, delicate health, resentful, disagreeable disposition. Husband hot-tempered, even the thought of coition with a pregnant woman was disgusting to him. He proposed total abstinence during the time and that they practice absolute control over their tempers. The expectant mother took up the study of music, literature, history, and mathematics. The child, now seven years old, is amiable, thoughtful of others, with decided intellectual tendencies.

Another couple, both delicate, decided they would have a healthy child and a mathematician. They gave especial attention to their mode of living and diet and took up the study of mathematics. The child, a boy, is robust and is almost phenomenal in mathematics and mechanics.

A woman, German, brunette, obstinate, never more happy than when standing behind the bar serving drinks.

The husband, Irish, blond, devilish, ranting, owned a saloon. They made no effort to control their desires and appetites or to better their conditions and surroundings. The result was a child, the incarnation of all that was evil; she was vicious, loved to torture other children, and was all sunshine and smiles if permitted to sit on the table and drink with the habitués of the saloon. Even when three years old would drink to the health of any who would treat her. Need we ask what the future of that poor, depraved piece of humanity would be?

A couple, middle life, both homely, dark-complected, determined to have a beautiful flaxen-haired, blue-eyed babe. They went to an art store and found her ideal in a picture which she purchased and hung in her home. At this shrine she worshiped

during the nine months. Strange as it may seem the little girl was almost a counterpart of the picture, and they always said they made their baby to order.

We all know that the life of the fetus may be destroyed and miscarriage result from mental shock or grief, thus showing the great influence of the mind over the pregnant uterus and its contents.

Can we question these influences when we see the unsightly birthmarks which often make an otherwise comely person hideous? We cannot say it is chance, because it is often a counterpart of the cause, and the mother can tell the time, place, and conditions causing it. Many say, never interfere with a pregnant uterus. I disagree with this, as there is never a time when healthy, normal conditions are more important.

I have often checked the vomiting, overcome nervousness, relieved headache and backache during the early months of pregnancy by repositing a displaced uterus or ovaries or both. There is less danger of miscarriage in replacing than in allowing the condition to exist, and certainly gives marked relief and comfort to the patient.

The first duty of the physician is to put the patient in a normal condition and try to maintain it.

It is a mistaken idea to wait for nature to straighten it up thereby taking the risk of abortion, the discomfort and suffering of the patient, when it can be overcome by careful and judicious treatment. Copulation during gestation is a question of varying opinions. Some think it inhuman, almost indecent, lower than the animals; others think it is the fulfilment of the highest human instinct, the fabric of the home life, the real union of two souls and bodies.

Some condemn it as causing traumatisms. Others believe it is an escape of congestion. Personally I believe indulgence to a limited degree is not harmful unless causing discomfort or is disgusting to the expectant mother.

Where there is real love and sympathy between husband and wife there is the mutual desire for the fulfilment of this God-given instinct which is the foundation of the social fabric.

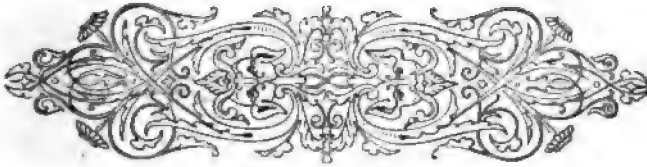
I believe the suppression of the desire is harmful to both morally, mentally, and physically. A woman must be innocent indeed, and trustful in this age if she could believe her husband was absolutely true to her for nine or ten months if he

was deprived of (as he thinks) his rightful inheritance. Some men would be true, but the majority would seek relief elsewhere and ease their conscience with the thought that it was for the good of the wife and child.

Women are more exacting, more jealous, more suspicious during the pregnant state than at any other time. Therefore, I believe a judicious amount of indulgence is beneficial, as it allays the fears and anxieties and gratifies the desire for physical contact.

The suppression of the desire would have a tendency to create an abnormal sexual appetite in the unborn. Have we not always heard of the unsatisfied infant due to some ungratified desire of the mother? If these laws could be understood and practiced, many diseases could be eradicated, coming generations be stronger and better. Sin and wickedness often follow in the trail of diseased minds and bodies. I believe the child in utero could be molded to suit the parents and by proper treatment of the mother the disease germs could be rooted out, and in time better physical conditions prevail.

I have simply tried to call your attention to a few dire results following certain diseases and to point out to you some delightfully beneficial results from determined, persistent efforts along proper channels for uplifting and benefiting the human race.



A CONSIDERATION OF GASTRIC ULCER FROM A
SURGICAL POINT OF VIEW.*

BY J. EMMONS BRIGGS, M. D.

There is no branch of surgery which has attracted more attention during the past five years than surgery of the stomach, but it is only recently that it has taken definite shape with precise indications and scientific application to the various pathological conditions which heretofore have been imperfectly understood and empirically treated. For years the general practitioner has considered the stomach his domain; he has watched the encroachment of the surgeon upon his territory with more or less distrust. In a truly unselfish spirit he has ever been ready to share honors with the surgeon, but he has been peculiarly skeptical concerning results in stomach surgery. The cure of chronic dyspepsia by a gastro-enterostomy was quite a departure from his treatment with bismuth or nux. Then the operations were new, the technique not perfectly developed, and the mortality proportionately high. No wonder physician and patient hesitated, for the surgeon himself was not without misgivings.

All this is now passed. Thousands of operations upon the stomach have been performed. Indications are precise. Methods have been simplified and definite results are to be expected. In no branch of surgery are the patients more signally benefited. Watch the patient after gastro-enterostomy for pyloric stenosis cautiously testing those articles of food which his experience had taught him to avoid. Having partaken without the customary discomfort he is emboldened to try once more. Succeeding again his confidence is established, he is enthusiastic about his own deliverance, his optimism knows no bounds,—his deliverer becomes a beatific saint.

The indications for operation upon the stomach are now greatly simplified. The problems for the general practitioner are much easier of solution than in the majority of diseases. It may be said that all non-malignant affections of the stomach which have not yielded within six weeks to scientific medical treatment are suitable cases to be treated surgically. In the majority of cases this means some form of ulceration of the

* Read before the Mass. Surg. and Gyn. Society, June 12, 1907.

stomach, either acute or chronic, or pyloric obstruction, the late results of ulceration.

The true peptic ulcer is usually single, and in three-fourths of all cases occupies a position within the pyloric one-third of the stomach, usually in the posterior wall and near the lesser curvature. The acute ulcer is well rounded with edges infiltrated and deeply inflamed. Its progress is slow as it advances from the mucosa through the muscular coat; before the serous coat is perforated there is usually peritoneal thickening and agglutination to surrounding peritoneal surfaces, which often fixes the stomach quite firmly to adjacent structures. Sometimes, however, perforation occurs before these protective adhesions are formed. These ulcers may heal by formation of cicatricial tissue, although they frequently remain in an indolent state. In healing no normal mucosa is to be found within this crater-like excavation, but rather a fibrous scar tissue of low vitality, which frequently breaks down and the symptoms of active ulceration recur. If this ulcer is near the pyloric orifice the contractions caused by cicatricial healing usually narrow the orifice of exit, and symptoms of pyloric obstruction appear which grow more and more aggravated as the passage contracts. Nature at first hypertrophies the stomach wall in order that it may more efficiently expel the food; later the muscle is overcome in its futile effort and dilatation occurs.

All cases of pyloric obstruction produce characteristic and typical symptoms not to be easily overlooked, yet these patients are frequently treated for months or years as obstinate cases of dyspepsia. To a certain extent they respond to medical treatment. Fermentative changes are thereby delayed, dietary restrictions limit the discomfort, and the frequent use of the stomach tube removes decomposing food and engorgement. But the cause of the misery is a mechanical obstruction and the permanent relief, if any is to be given, must come about by mechanical measures.

The classical symptoms of ulcer of the stomach are pain, sensitiveness, vomiting, and hemorrhage. These may all be present but frequently one or more are absent altogether.

In ulcer of the stomach the pain is referred to the epigastric region to the left of the ensiform cartilage; is often described as sharp and lancinating, or dull and boring. It is worse imme-

diately after eating and persists until the stomach is emptied and the peristaltic movements cease.

If pressure is exerted in the epigastric region considerable tenderness will be experienced. Of even more value from a diagnostic point of view is the soreness experienced by pressure just to the right of the vertebral column opposite the tenth or twelfth dorsal vertebra.

Early in the history of gastric ulcer vomiting is frequent and distressing, being often due to the excessive acidity of the stomach. Later in the case it may become characteristic of pyloric obstruction, coming on at frequent intervals, but being excessive in amount and containing decomposed food. At this stage of the disease diagnosis is positive, the only question being whether the obstruction is benign or malignant.

The vomiting of blood is the most characteristic of all symptoms of gastric ulcer. It occurs in fully one-half of the cases and may either be in small amounts frequently repeated or in great quantities sufficient to cause alarming symptoms. It appears simultaneously or late in the stools, giving to them a dark color. This symptom, so diagnostic when it occurs, may be wholly absent, as it has been in several cases on which I have operated and found extensive gastric ulceration.

Ulcer of the stomach is frequently difficult to differentiate from ulcer of the duodenum, from cancer of the stomach, occasionally from gallstones. If perforation occurs and definite history is not obtainable it is impossible to make a differential diagnosis from other acute abdominal conditions which occasion suppurative peritonitis, but in all these conditions including cancer early operation is indicated either as a curative or palliative measure. Of course, there are definite contraindications to operate in cancer, such as extensive metastasis, pronounced cachexia, and patients in extremis, but it is wonderful how much relief these unfortunates experience from a gastro-enterostomy if the symptoms are those of pyloric obstruction.

In the early part of this paper reference was made to the present status of gastric surgery; that surgical interference was called for under well-formulated indications. Let us now consider more in detail the exact conditions which should lead the general practitioner to abandon all medical measures and invoke surgical assistance, in acute ulcer of the stomach, after medical and dietetic measures have failed. Six weeks ought

to be a sufficient time in which to treat a case medically. If improvement is not manifest in that time operative measures should be taken. Again after treating a case medically with satisfactory improvement, should recurrence take place, then the case should not be subjected to further delay. In cases of very acute and alarming hemorrhage of the stomach, the result of ulceration, it is best to delay operation until the crisis is passed, but repeated hemorrhages call for gastro-enterostomy—or resection of the ulcer, often with a gastro-enterostomy.

All cases of chronic ulcer should be subjected to operation, first because in themselves they are a source of danger from perforation and in healing they form cicatricial contractions usually encroaching upon and narrowing the pyloric orifice, thus subjecting the patient to all the discomforts of obstruction and dilatation, but we also prevent the transformation into cancer by early excision of the ulcer. The excision of an ulcer is more dangerous than a gastro-enterostomy, but it relieves him of the danger of malignancy, a very frequent transition in the author's opinion. Where an excision of an ulcer is undertaken after cicatricial contractions have occurred it is wise to make a gastro-enterostomy after resecting the ulcer, thus overcoming any tendency to pyloric obstruction. This alone will give permanent relief. A chronic ulcer subjects the patient to constant discomfort, reduces him to a state of chronic invalidism, induces loss of flesh and gradually asthenia. Operation should not be delayed until patients are reduced through long-continued suffering and starvation.

The operation of choice in ulceration of the stomach is the posterior gastro-enterostomy. In performing this operation I follow the method as laid down by Moynihan. Having found this operation so satisfactory I have never used Roux's or Mayo's modifications. On three occasions pyloro-plastic operations have been done but the tendency is now to almost wholly rely upon gastro-enterostomy. Several times I have resected ulcers from the stomach without making gastro-jejunostomies, but this operation is, in my opinion, more dangerous, although in favorable cases it is an exceedingly desirable and radical procedure. Having seen a number of cancers taking their origin in old ulcerative areas, it seems as though our efforts should always be directed toward the removal of this ever present danger.

The operation of the Mayos demands more than passing notice as their experience has thoroughly upset one of the fundamental principles of the older operation, the Mayos claiming that the reversal of the peristalsis is of no consequence. As has been previously said we follow the method of Moynihan as closely as possible, always using the greatest care to drain the stomach at its most dependent position; this will usually be from three to four and one-half inches from the pylorus at the greater curvature. The opening in the jejunum is made as closely to the flexure as possible in order to eliminate the loop. The incision in the stomach is made in an oblique direction, the upper end being nearer the cardiac end than the lower. The opening is made fully three inches in length, and sutures are always used in making the anastomosis. My preference is the Pagenstecher thread. I have never used the Murphy or any other form of button, nor have I made use of the McGraw ligature. The advantages of sutures over the button are to my mind so far superior that one should never use the button except when great haste in operating is required. A patient would, it seems to me, be too far gone to attempt any operation upon if he could not stand the extra five or ten minutes necessary to apply the suture.

The ultimate results in operations for stomach ulcer are most gratifying. Almost immediate relief follows a skilfully conducted operation performed on a patient suffering from a well-defined and uncomplicated ulcer. Unfortunately patients frequently consult us only as a last resort, having been brought low by long-continued pain, hemorrhage, and starvation. These patients are bad surgical risks, but inasmuch as operation offers them their only chance they should be given an opportunity.

It has happened several times in my experience that it has been impossible to differentiate between ulcer and malignancy, or rather to determine whether the ulcer is undergoing transitional changes. Several times upon the operating table immediate examinations of frozen sections have been at variance with the clinical and macroscopical appearance of the lesion. Thus disappointment has followed several cases which were considered non-malignant at the time of operation, and vice versa. Take, for example, two cases which occurred reasonably near together, one gastro-enterostomy being performed on February 27, 1907, the other March 1, 1907.

Mrs. H., aged forty-six, had been feeling ill since November 18, 1906, with distressing pains in the stomach, sour and bitter taste in mouth, frequent vomiting of alternately green and dark brown material, great distress after eating, stools often very dark in color, considerable emaciation but no cachexia. On opening the abdomen we came upon an area of induration. A thin spot was easily made out in its center, marking the excavation of the ulcer. New vessel formations occurred on the peritoneal surface and numerous adhesions were encountered. Enlarged lymphatic glands were found and one was removed which the pathologist reported non-malignant. Here was a case, thought we, of typical ulcer of the stomach, and admirably adapted to gastro-enterostomy, but it seemed unwise to attempt resection of the ulcer on account of the extensive adhesions which had fixed the pyloric end of the stomach. She went through the operation without incident, had no vomiting, began to take food nicely, was relieved to a satisfactory extent. About a month after the operation she began to suffer from gastric disturbances again, vomited occasionally, and a bunch became evident in the epigastrium. She grew steadily worse, emaciated rapidly, and became cachectic. Feeling confident that she was doomed we yielded to her request and allowed her to return to her home, where she died about three months after her operation.

In this case we thought we had a non-malignant condition which offered every prospect of radical cure. It was evidently a case of ulcer of the stomach which was undergoing transition at the time operation was performed. Her death was doubtless due to carcinoma which developed rapidly. Her operation was a blessing as it gave her freedom from pain, distress, and vomiting almost to the end.

Two days later I operated upon a Mrs. R., aged fifty-seven, who had symptoms which indicated malignancy. She had emaciated alarmingly, having lost thirty-odd pounds within the past six months. She was exceedingly pale and suffered from distressing pain, soreness, fullness after eating, and frequent, almost constant vomiting. Gastro-enterostomy was made in order that she might be made more comfortable, but without any expectation of lasting benefit. She made an excellent recovery, commenced almost immediately to put on flesh, and left the hospital March 29, 1907. I have just received

a letter from her dated June 11, 1907, which, abbreviated, reads as follows: "I have gained every day since I left the hospital. My food does not distress me in the least. I enjoy every mouthful. I eat anything, potatoes, meat, fish, bread, pickles, strawberries, salads, peanuts, apples, etc. Gained twenty pounds the first month; have not been weighed since." This is the case which we diagnosed both by clinical and microscopical findings as malignant, but the subsequent history seems to indicate the reverse.

I am citing these two cases to illustrate the unreliability of symptoms and even microscopical findings from frozen sections made while patients are on the table. A more important lesson, however, is to be deduced from these cases, viz., to operate upon all doubtful cases, for very unexpectedly lives may be saved and in practically all immense relief ensues.

I shall refrain from the citation of cases and summary of stomach operations in detail at this time. Many of my cases have already been published and others are withheld pending a paper now undergoing preparation.

Before closing this paper, which may seem to my hearers rather optimistic, I cannot refrain from disclosing to you a very discouraging chapter in stomach surgery. Reference is here made to the stomach neuroses. These unfortunate patients present all the symptoms of organic lesions of the stomach, their suffering and chronic complaint may tempt us to resort to surgical interference. On abdominal section nothing organic will be found. So far we have committed no serious offense. We have made an exploratory incision, the only means to arrive at a definite diagnosis, but finding nothing abnormal we shall commit a grave error if we make a gastro-enterostomy in the hope of relieving this condition. These unfortunates will be likely to have regurgitation of bile, suffer from the same old and worse new pains than before and, utterly discouraged, they become hopelessly and irretrievably doomed.

ON THE PRINCIPAL FEATURES OF EXTRA-UTERINE GESTATION, WITH ESPECIAL REFERENCE TO THREE UNCOMMON CASES.*

BY GEORGE BURFORD, M. D.

What is extra-uterine gestation? How does it come about? How may it be recognized and dealt with? To be precise, all forms of gestation other than in the normal uterine cavity should be styled ectopic, for there is one form—the interstitial form—which takes place in that part of the Fallopian tube that passes through the uterine wall, and in its growth really becomes an aberrant uterine pregnancy. This form is rare—so rare, that very experienced observers have found not more than one case in the whole of their operative work; and some not one.

The immense majority of ectopic pregnancies are tubal, and to Tait is the credit due for insisting on this. Only quite lately has it been demonstrated that primary ovarian pregnancy may occur—that is, that the ovum may be fertilized, and continue to develop in ovarian tissue. But this result is so rare, that its clear demonstration as a possibility has only been made after endless research work, and in a fractional percentage of ectopic-gestational cases.

To the tube, then, belong the honors, practically, of ectopic gestation, for primary abdominal pregnancy—except in the ovary as already alluded to—is a primary abdominal myth.

What causes, what brings about, the implantation of a fertilized ovum on the tubal instead of the uterine wall? Frankly, we do not know. Tait considered he had solved the problem by postulating *à priori* “desquamative salpingitis,” owing to which the cilia of the tubal mucosa had been shed, and thus retardation of the ovum in the tube rendered likely. This was further made *à priori* probable, in that sundry lesions of the tube often preceded the occurrence of tubal gestation. But many recorded cases do not present the history of any antecedent pelvic symptoms; and in one of my own cases what pelvic ailment existed was on the other side to that on which the tubal gestation occurred. Moreover, Tait considered that the

*Read before the London Meeting of the Western Counties Therapeutic Society, on June 5, 1907.

movement-direction of the tubal cilia was towards the uterus, thus physiologically opposing the ingress of the spermatozoa to the tube. But later investigation has shown that the ciliary movements are toward the fimbriated tubal end; so the theory of ciliary opposition is invalid. Another explanation of the theory spinners—library men, as I call them, as opposed to laboratory or ward-observation men—is that impregnation always occurs in the tube. But for this wild theory there is not an atom of valid evidence, so I must leave the explanation of the preference of the fertilized ovum for the tube, and not for the uterus, as an unsolved problem.

Take, however, this postulate as of prime importance: "the development of an ovum in the tube, at any part of it, commonly results in rupture of the tube." And so deadly is the usual issue of tubal rupture, that it has actually been proposed to consider tubal gestation as a malignant disease, on the ground that its usual tendency is towards death.

Now the varieties of ectopic gestation are as follows:

<i>Primary</i>	{ Interstitial.
	{ Tubal.
	{ Ovarian.
<i>Secondary</i>	{ Intra-ligamentous.
	{ Abdominal.

When gestation takes place in the utero-parietal tubes it is called interstitial. This is a most deadly form of ectopic gestation. The gestation sac widens and expands, throws the other parts of the uterus out of proportion, and finally usually ruptures into the abdominal cavity. This form of ectopic gestation is exceedingly rare. Specimens are to be unearthed in London Museums, but one may go for a lifetime and never see a case. Mr. Tait recorded one case that he observed in his practice.

But quite otherwise is it with gestation in the Fallopian tube in its free portion. Such are by far the most frequent of all ectopic gestations, so much so that Tait insisted that all extra-uterine gestations were primarily tubal. This is, with the rarest exception, still sound teaching. Now, there is no acute pelvic condition in the feminine gender more potentially deadly than this of tubal gestation. Let us imagine the fertilized ovum implanted on some part of the tubal wall, and increasing

in size as weeks elapse. One of a few alternatives now happens.

(1) *Rupture into the Abdomen.*—This is the commonest. At any time from the fourth to the fifteenth week, rarely later, the tubal walls are so thinned that expansion is no more possible, and the tube ruptures, the embryo being shot out into the abdominal cavity. Furious hemorrhage may ensue, and the patient often sinks from its occurrence, unless abdominal section be promptly performed and the bleeding vessels tied.

(2) The patient may survive the syncope due to the first outrush of blood. In a few days the bleeding recurs, and again recurs, and the deferred lethal result accrues later on, the abdomen being found to contain pints of blood as the issue of repeated hemorrhages.

(3) In another type of case the hemorrhage is inconsiderable, the tear not occurring through the site of the placental attachment. The fetus is extruded, and may continue to live and grow free in the abdomen, because its placental implantation is not detached. Sooner or later the fetus dies, its nutrition not keeping pace with its requirements, and the fetal mass becomes encapsulated, undergoing degenerative changes. Or it may be removed by operation prior to its demise.

The first specimen I have to demonstrate is from a case of extra-uterine gestation of this type.

Case 1.—Extra-uterine Gestation in which a Five Months' Fetus was removed from the Free Abdominal Cavity.—The patient was aged twenty-seven, having had one previous confinement some five years ago. From that time onward she had menstruated regularly till the absence of the usual period gave her the first indication of a commencing pregnancy. The gestation proceeded apparently normally for some three months, when the patient's attention was attracted to a painful swelling in the left flank, with a decided tendency to increase. A month and a half later the pain had become so acute that hospital treatment for some three weeks was requisite to subdue its urgency, and to enable the patient once more to move about.

A few days after her discharge from hospital labor pains set in and continued for some days, during which time pieces of "flesh"—probably decidual masses—were noticed in the hemorrhagic uterine discharge. Coincident with these phenomena was an attack of syncope, so severe as to continue for

twenty-four hours. Before long she rallied, and so considerably as to be able to undertake a railway journey. Very soon, however, the former symptoms recurred. A sudden sense of violent movement in the side was followed by another and severer syncopic attack; and again the peculiar uterine discharge occurred, the "fleshy" pieces admixed. This attack lasted some three weeks and concurrently with its cessation a new phenomenon, that of persistent backache of a bruised character, was noted. Retrograde changes now appeared; the abdominal girth gradually lessened, the breasts ceased to secrete, and the previously swollen legs returned to their normal dimensions. Finally a menstrual period, after ten months' intermission, denoted that the changes incident to pregnancy were at an end.

Examination of the abdomen when the patient came under our observation indicated the fetus lying free in the abdominal cavity. Operation disclosed commencing mummification in this fetal mass, which was removed, the patient making an excellent recovery.

This case created some interest at the time, and found its way into German specialist literature. And only last year I received a long letter from a German investigator, asking many further questions by way of amplification of the foreign report of this interesting case.

(4) Another course lies before the expanding tube with the growing fetus. If the area of least resistance is opposite the broad ligament, the folds of the broad ligament are opened out by the expanding gestation, and the rupture may occur into the potential cavity of the broad ligament itself. Here, again, the fetus may either die and disappear, or the gestation may continue, and even go on to term, escaping from the broad ligament as growth increases, or like a broad ligament cyst, continue to grow, with the expanding sheets of the broad ligament continuously enfolding it.

(5) Yet another and possibly most interesting of the alternative issues of a tubal gestation falls to be considered. We all know full well uterine abortion. Now its analogue, tubal abortion, occurs not infrequently, but into the peritoneum, not into the uterus. To our own countryman, Bland-Sutton, is due the credit of first bringing this prominently to the notice of English-speaking physicians. The tube does not rupture;

the fimbriated end opens out gradually, and the endeavor at expulsion is accompanied by perpetual hemorrhage from the bleeding vessels, constituting a hematocele in the cavity of the pelvis. Although the risk of hemorrhage may not be so great here as in the case of rupture, the clot-mass may, and often does, suppurate from the easy passage of germs from the adherent intestine into a volume of pabulum virtually outside the organism.

Of these varieties the second is the most frequent—rupture with repeated hemorrhages. I now relate a case of this, which has also the character of presenting an extraordinarily rare double event.

Case 2.—Double Simultaneous Ectopic Gestation in the Fallopian Tubes: Operation: Recovery.—The case (specimen exhibited) was that of a married woman, aged thirty-three, under the care of Dr. Sandberg, of Streatham. The clinical history showed that she had a normal parturition twelve years ago; two years later a premature labor occurred with adherent placenta. Several miscarriages took place in the ensuing years, and the last about three years prior to the present date. Since this latest miscarriage she had been perfectly regular, the last normal period commencing on September 7, 1904.

In October the menstrual period was wanting, and late in that month, and during November, a sanguineous daily discharge, now lighter and now darker in tint, had persisted up to November 28, the date of consultation. During this hemorrhagic term she experienced constant pain day and night, sometimes with acute exacerbations. There had been no definite crises of collapse, and the occasional acute seizures of pain were readily and safely tided over. No shreds or membranous patches had been seen in the vaginal flux. Examination now showed diffused abdominal tenderness below the umbilical zone. The percussion reaction was ill defined, and no definite area of dullness was demonstrable. Per vaginam the uterus was drawn to the right side, not freely movable, enlarged, as in chronic subinvolution, and flanked by a diffuse inelastic deposit, mainly on the left side, disturbing itself in less degree behind and to the right.

The diagnosis seemed to leave little to seek, and she was at once sent into hospital. The following day, while in bed, symptoms of internal hemorrhage suddenly occurred, and the

condition being critical, the abdomen was opened without unnecessary delay. A small quantity only of recent clot presented itself, while the pelvis was roofed over by dense omental and intestinal adhesions.

Breaking through these, some handfuls of clot and a good deal of fluid blood were removed, and an intimately adherent mass about the size of an orange enucleated with difficulty. This was the left gestation sac, and perpending from it was fetus still alive. Further search revealed a tubal swelling of less dimensions and of firmer consistence on the right side also, which on removal proved to be another gestation sac with another fetus plainly visible. The most recent hemorrhage had been from the left side. Transfusion to the extent of two and one-half pints was carried on during operation. The patient made an unbroken recovery.

The specimens were submitted to the Clinical Research authorities for report, which was as follows: "These specimens obviously represent two ectopic gestation sacs with contained fetuses. The right sac consists of the very much thinned-out Fallopian tube with the gestation sac in its ampullary extremity. . . . The fimbriated extremity of the right tube is opened up, and the opening measures about 8 mm. in the preserved specimen. . . . From this description it will appear that the specimen represents a tubal pregnancy which has been converted into a mole by hemorrhage, and that hemorrhage has probably also occurred into the peritoneum through the open fimbriated extremity.

"The specimen removed from the left side has much the same characters. It is a tubal mole, contains more than half its dimensions of blood clot and obvious chorionic villi, the rest of the sac containing the fetus.

"From the measurements of the fetuses of the two sides, 38 and 41 mm. respectively, it would seem that they must be of approximately the same period of growth, and if not actually conceived at the same time must have been very nearly so. The ages of the fetuses corresponded approximately to eight weeks.

"The smaller fetus is very macerated, and so may be regarded as having been at one time more nearly the same size as the larger one, which is quite well preserved."

Now the special and interesting peculiarity of the case is

this: it appears to be the sixth recorded case in the medical literature of the world. At the same time that this specimen was exhibited to the British Gynecological Society, Professor Schauta, in Vienna, was reading a paper on the varieties of tubal gestation before the Vienna Obstetrical Society. Dealing *inter alia* with this form of tubal gestation—simultaneous conception in both Fallopian tubes—he mentioned that he had been able to find only four recorded cases in the history of the world. Professor Weinlechner, who was present, mentioned that he had had another, which brought the list up to five. This case, therefore, constitutes the sixth, and the specimen, therefore, is one of extraordinary rarity.

I now come to a brief enumeration of the early signs and symptoms of extra-uterine gestation. These are:—

(1) Where childbirth has previously occurred, some years have probably elapsed since the last normal pregnancy.

(2) There is usually a history of recent omission of the ordinary menstrual flow.

(3) Even as early as the fifth or sixth week after the last period a hemorrhagic discharge often appears.

(4) Shreds and patches of decidual membrane are frequently found in the blood discharge.

(5) Irregular pelvic pains, sharp and colicky, may be complained of in the stage preceding rupture.

(6) On examination pulsating vessels may be made out in the vaginal cul-de-sac on the affected side.

(7) The uterus enlarges to a moderate degree, resembling in bulk a subinvolved uterus.

(8) The uterus itself is empty.

(9) In Douglas' pouch, and developing to one side of the uterus, is the tubal gestation swelling.

The classical signs and symptoms of tubal rupture are as follows:—

(1) Suddenly, without warning, the patient is seized with acute abdominal pain.

(2) She rapidly becomes faint and collapsed, and vomiting usually occurs.

(3) All the signs of internal concealed hemorrhage are present; the face is pallid, the lips blanched, the extremities chill, and, most important of all the pulse is weak and frequent, still tending to rise.

(4) Consciousness is maintained, the mental state is passive, but the perceptive faculties are clear.

(5) Pelvic examination gives, as a rule, the indication of a recent intraperitoneal effusion.

(a) The patient may continuously grow worse, and death ensue within twelve to thirty-six hours from the commencement of the attack. The earlier the rupture, the greater the risk of this rapidly fatal issue.

(b) In other cases the crisis of the attack may be passed and the patient somewhat recover, still remaining seriously ill. In a few days the symptoms are repeated, and to this, or to a succeeding attack, the patient often succumbs.

(c) Or the accompanying hemorrhage may be limited in amount, the extruded embryo small, and the hemorrhage not recurring; the whole mass may ultimately be absorbed without further untoward incident. This is stated to occur especially in cases of early rupture between the folds of the broad ligament. Or, after extrusion of the fetus into the general peritoneal cavity, the embryo may continue to flourish in its new environment, even up to term; but, sooner or later, unless previously removed by operation, the fetus dies, and the consequences of a dead mass in the abdomen then develop themselves.

Finally, I have to give some details of an uncommon case where the tubal gestation was diagnosed as such, and successfully removed by operation before rupture. That this is a diagnostic feat for which I may have some legitimate pride, is evidenced by the fact that Tait wrote, "I am of opinion that no authentic description exists of an unruptured tube-pregnancy." And again, "I have only seen one case before the period of rupture, but the question of the woman being pregnant never entered the mind of any one who saw her."

Case 3.—*A Rare Instance of Extra-uterine Gestation Diagnosed before Rupture and Removed Intact.*—The history was fairly clear. Married less than a twelvemonth, this lady had normal periods till December, 1906, except for a delay of fourteen days before the September period came on. When this delayed one appeared, however, it was perfectly normal in every way, and did not suggest an early miscarriage.

In January the period was missed, and about six weeks after its expected advent, comparatively slight hemorrhage, irregular

in its course, but never entirely ceasing, continued up to the time of consultation. Once and again a small clot had been passed, but no membranous shreds were at any time noticed, nor was the flow ever malodorous. Further, abdominal or pelvic pain had at no time been a marked feature.

Some two weeks after the commencement of hemorrhage a consultation was held and the aspects of the case reviewed. Physical examination—a matter of considerable difficulty in this instance—indicated, from the somewhat enlarged and softened uterine organ, the probable occurrence of pregnancy but the clinical history did not quite tally with the usual symptoms of an early miscarriage. The possibility of an extra-uterine gestation was discussed, and it was decided to administer an anesthetic, and, while clearing up the remaining points in the physical condition, to arrest the uterine hemorrhage also.

Examination under anesthetic clearly showed a soft, elongated swelling apparently running parallel to the long axis of the uterus, and about the size of an English sausage. The uterus was pushed over to the right. A careful review of the clinical history, together with the physical examination, confirmed us in the belief that we had here to deal with a veritable case of extra-uterine gestation. Operation confirmed the diagnosis: the swelling proved to be a tubal gestation on the left side, with no blood effusion as yet into the peritoneum. The gestation sac was removed, and the patient made an unbroken recovery.



CÆSAREAN SECTION.*

BY G. FORREST MARTIN, M. D.

The history of this operation makes reading of the most interesting type, and the various changes which have been brought about by time, both in the manner of operating this condition, and in the decision of the question of operation, illustrate, as perhaps no other single operation can, the tremendous advances of modern surgery, and of its technique.

It is interesting to note that back in the days of Numa Pompilius, that potentate "forbade the burial of pregnant women in whom the operation had not been performed." It was not until

*Read before the Mass. Surg. and Gyn. Society.

1500 that it is authentically reported as being performed on the living woman.

Since that date, the sentiment for and against the operation, and the changes of opinion as to what class of cases should and should not be thus treated, have undergone many variations.

The death rate, both to the mother and the child, has been gradually coming down from the old figures of 84 per cent. to 100 per cent, of the early days, until now we find numerous operators claiming a death rate below 10 per cent. for the mother and half of that for the child. And a few claim much better results. Suffice it to say, in this connection, that, in the opinion of the best operators, the operation is now firmly established as a valuable and a justifiable obstetric procedure in suitable cases, and one which is the means of saving many a valuable infant life, to say nothing of the immense relief from suffering afforded to the mother. For I can assert, with the utmost assurance, after watching a number of cases carefully, that the post-partum condition of the mother is one of ease and comfort compared to her state after she has been subjected to a severe instrumental delivery following a long period of extreme pain and ineffectual attempts at self-delivery. The tears and stitches, the long period of catheterization, the bruised and helpless rectum, etc., are all avoided, and a comparatively comfortable convalescence takes their place.

Page after page has been written in discussing the size of the pelvis which justifies this operation. But it is a problem which cannot be settled by figures alone. Like the selection of our remedies, every patient must be a law unto herself. The size of the fetal head, or even its position, may be the determining factor. A shelving brim, a kyphotic pelvis, or any one of many varieties of pelvic deformity, or a fibroma of the uterus may demand the procedure. I think that Dr. Briggs of this city has recently reported two such cases. From my own experience, I am strongly of the opinion that we should add to the common list of indications the cases of mothers who have had one or more fatal labors, from inability of good obstetricians to successfully deliver children of even moderate size. I think this may apply, even though the figures of the conjugate diameter may not come below those commonly accepted.

Of course the chances of carrying these cases to a successful termination are greatly enhanced if a good modern hospital is at

hand, or if the patient can be moved to one in advance of her expected ordeal. With this provision, and the added advantage of competent assistants, intelligent attention to asepsis, and careful watching after operation, the death rate will be much diminished. While some statistics show better results in patients living in the country than in those who reside in the cities, they certainly must omit the above factors from the problem.

This view of the matter also forces upon us the conclusion that a good obstetrician should also be a good surgeon, or should be able to decide when the time to resort to surgery has arrived.

The best time to operate must be decided by many factors, such as the general condition of the patient, the loss of blood, the condition of the kidneys, etc. But in a general way, it seems best to wait until full term has arrived and the pains have become regular. At this time we have the benefit of the contractions to promptly close the uterine sinuses after the operation is performed, and we also have the cervix sufficiently dilated to give good after-drainage. In operating for fibroids complicating pregnancy, where a hysterectomy will probably follow the Cæsarean section, this advice would be altered.

On the other hand, to delay much longer than this adds to the danger for the child, owing to the pressure of the uterine muscles. Infection through the open canal should also be considered and guarded against.

Numerous cases have of late been reported where second and even third births by Cæsarean section have been successfully carried through, so that this operation need not be considered as preventing subsequent child-bearing. As a matter of fact, however, we will probably be solicited to so operate the case as to make further child-bearing impossible. It is an open question whether this is always wise or right, though I can conceive of many cases where it is certainly justifiable. I shall allude to this feature again in the case records which follow.

Case 1.—I saw my first case of Cæsarean section in 1898, operating on March 23 of that year. This case was reported in the Transactions of the Amer. Inst. for 1896, and from it I briefly quote. "Was called March 14 to Mrs. K., æt. twenty-eight, mother of four children. She had been flowing, off and on, for thirteen months. For the past three months this had

been much worse, coming away in gushes whenever she stood on her feet. She considered it a menstrual disorder, and had not consulted a physician, nor did she know that she was pregnant. I found her lying on the floor in a pool of blood, where she had fallen from exhaustion. Found cervix a raw, bleeding mass, os open 1-2 inch, uterus firmly fixed in pelvis by a hard cancerous mass, the cause, as one vessel after another was eaten away, of the profuse hemorrhage.

"The uterus was high up, and contained a living child. The motion, though feeble, was apparent. Here was a dilemma! The growth too far advanced, and too hopelessly adherent to bladder and rectum to offer any hope of removal.

"The patient was weak, bloodless, and exhausted, and was threatened with an awful death in labor. The patient was removed to the Lowell General Hospital, put to bed with the foot elevated, fed up on Bovinine and other easily digested foods, and given chin. ars. internally. The os was packed and cleansed and she rallied perceptibly for a week. March 22 pains and some hemorrhage came on. March 23 the pains were worse, and labor had begun.

"I operated the following morning, assisted by Drs. Gage, Leland and Burnham. The incision was median, and from the umbilicus nearly to the pubes. A hasty examination showed secondary involvements too extensive to offer the slightest hope of operative removal of the uterus and adnexa.

"Uterus was pushed up to the abdominal wound, flat sponges were packed around it to protect the peritoneum, and a median incision was made. We struck into the placenta, but hastily tore through it, grasped a foot and the child quickly followed. Sweeping the hand hastily around the uterine cavity the placenta was removed and hot sponges of gauze took its place. This produced prompt contraction, and the hemorrhage was checked.

"The uterine muscle was closed by deep stitches of silk, and a fine layer of the same closed the peritoneum over them. The abdomen was closed in the same way and a dry dressing applied. Drainage was inserted through the cervix before closing the uterus. (I should now use catgut instead, having entirely abandoned the practice of burying non-absorbable ligatures in the body.) The cervix was curetted of as much as possible of the cancerous mass, the vagina packed with gauze, and the

patient put to bed. Recovery was uneventful, and the patient left the hospital April 16. The child gasped a little for about one hour, but could not be rallied. Considering its feeble state, the probable malignant absorption, this was not regretted at the time. The peculiar features of this case are that such a patient could become pregnant in the first place, that a cancerous growth should progress so far with so little pain, that pregnancy should be so masked by a hemorrhage; and that an intelligent patient should thus mistake her size for a bloating; and lastly, the recovery, when the whole system was so drained and vitiated."

My only further comment on this case at this time, is, that I think there could be no question raised of the right to operate under these conditions.

Case 2.—I had no further experience with this operation for four years. On October 12, 1900, 3 P. M., was called to Mrs. A., primipara, æt. twenty-three years. She had been in pain all day, though not severe. Found os dilated to size of a half-dollar, head high up and not at all engaged. I allowed labor to proceed for three hours and then, finding little progress, I gave chloroform, made a careful examination, and with great difficulty succeeded in converting a brow into an occiput presentation. This was made difficult especially by the very small size of the pelvis, which was not deformed but small in all diameters. I regret that I have not the measures of this case. I now tried forceps, but could make no progress. The head rested like a globe, above the brim of the pelvis. An examination showed the child to be alive, so I hastily summoned the ambulance, and without allowing the patient to come from under the influence of the chloroform, I removed her to the hospital, made a hasty preparation, and operated at midnight. We were laying a new floor in our operating room at the time, so I operated on a bed in a bedroom, by a single gas jet. The same procedure was followed as before, except that catgut sutures were used, and the placenta was not cut. The baby's back was in close contact with the anterior uterine wall, and received a cut two inches long, requiring two stitches. The boy weighed eight pounds, and came into the world squalling, just six minutes after the knife was taken, apparently none the worse for his version, his head squeezing with forceps, and his stab in the back. Layer sutures were used and all healed by first

intention, without any rise of temperature or a pulse above 80. The mother slept peacefully until morning, and then awakened with not the slightest idea that she had even left her own bed. She nursed her child from the start, and made a perfectly normal recovery. Dr. Van Deursen was my assistant on this case. An interesting feature in the history is the fact that this mother was a twin herself, and weighed less than three pounds at birth. Dr. Jewett of New York reports, in October, 1906, the case of a hebotomy in a woman who had previously had two severe labors with dead children, and adds, "she was one of twins in a family of twenty-four children and her mother had twins three times and triplets once." It is interesting to note here, that six years later this patient came to me for another abdominal operation. I opened the old scar, and found the anterior surface of the uterus perfectly smooth and showing no trace of its previous section.

The boy is now a lusty fellow of seven years.

Case 3.—Mrs. D., æt. forty, primipara. Was called to a neighboring suburb by Dr. Woods of Lowell, at 8 P. M., Sunday evening, July 30, 1905. Found patient had been in labor thirty-six hours, the last six of which had been severe.

The membranes were ruptured long before the uterus was closed down upon the child, and the pelvic bones were so close together that forceps could not be inserted around the head. The child was alive, and after we had both made a careful examination under full anesthesia, and satisfied ourselves of the futility of attempting extraction of a live child, I advised Cæsarean delivery. She was taken in the ambulance to the hospital, and assisted by Dr. Woods, I operated as before. The boy weighed six pounds, and both he and the mother made an uneventful recovery. She also nursed her child. She healed throughout by first intention and was up and out of bed August 15. Before we began operating this case, the vagina was carefully disinfected and packed with gauze.

Case 4.—Mrs. H., æt. thirty-two. This was her second child. The first was born dead, about eighteen months previously. I attended her in this confinement also and it was a very difficult one, although the baby weighed but four pounds. The presentation was a face, but the pelvis was justo-minor, and even this small body refused to come through alive.

So, when the second pregnancy occurred, she placed herself

early in my hands, and she came up to term in excellent condition. Labor began in the evening of January 20, 1906. She went in a carriage to the hospital, and before she reached there the pains had become pretty severe. Abdominal preparation was at once made, and after the patient was under anesthesia examination showed the waters broken, os the size of a half-dollar, but no approach towards engagement of the head.

Operation was performed as in the previous case. The boy weighed seven pounds, and came into the world in four minutes. Recovery was again without incident and both mother and child are at this writing perfectly well. Compare this outcome with that of the first labor with all of its sufferings, and its disappointments, and then add the almost certain consideration that this would have followed in the line of the first, had forceps been again applied, and we have one more strong argument in favor of this conservative measure. So often children are too large to be born alive, and either die in a prolonged labor or are killed in the attempts at extraction, that it seems to be our duty to educate the profession and the laity as to the value of this procedure, especially if we can see our patients early, before they are exhausted by prolonged effort, and by loss of blood. If possible Cæsarean section should be elective, not compulsory, and our patient should be carefully prepared for it.

Case 5.—Mrs. W., æt. thirty-two, primipara. Was first called to this patient at 10 P. M. on April 5, 1906, in consultation with Dr. Howard of Chelmsford. She was seven and one-half months pregnant, and had been flowing, by spells, for several weeks. Dr. Howard suspected placenta previa, and an examination verified his suspicions. The os was open an inch, and through it could be felt the soft, boggy mass of the placenta entirely covering the cervical opening.

The child's head could not be felt. There was some bleeding, and slight contractions. A sterile gauze pack was inserted around the cervix, and the patient sent to the hospital to be ready for emergencies. I remained with her until 12.30 when things seemed to have quieted down. The patient was kept quiet in bed and the packing replaced every third day, as we had now decided to try and carry her to term. She was not a strong woman, rather anemic, and of poor digestion. As the time for labor approached, that placenta loomed up before me

as more and more of an obstruction, and the dread of hemorrhage, or death of the child, should its extraction prove to be difficult, grew upon me. I convinced myself that Cæsarean section offered the best chance for the mother, and far the best for the child.

The family consented to the move, and so, on May 11, I operated, assisted by Dr. Van Deursen. The usual course through the median line was taken, the uterus being opened with great care, while my assistant held the arteries on both sides with his fingers. This precaution proved valuable, as the upper half of the placenta was found on the anterior wall. The lower half was crowded well down into the cervix, and across on the posterior wall. The child was out in nine minutes after beginning, the placenta removed with difficulty, as it adhered to the cervix strongly, drain of gauze was pushed down through the cervix, and the uterine and abdominal wounds were closed with layer stitches of catgut as usual. The child was a boy, again, weighing seven pounds, and as in the previous cases, the child and mother made good recoveries. In this case, there was a little delay in the recovery, owing to some phlebitis of one leg. She left for home, however, on June 2 in good condition, and at this date, one year after the birth, both are in good condition.

The special point of interest in this case is the decision to use this operation as a treatment for placenta previa, and the success which attended it. In 1893, Dr. Biggar of Cleveland advocated the careful consideration of this operation as a treatment for placenta previa, in a valuable paper which he read to the Amer. Inst. In my case, it certainly proved a great blood-saver, as the arteries were easily controlled.

Case 6.—Mrs. P., a small Swedish woman of twenty-two. Was called in consultation by Dr. Woods at 4 A. M., October 9, 1906. Found patient exhausted and discouraged by her attempts to deliver herself; waters had escaped, contractions were firm but entirely inefficient, as the pelvic bones were all too small for the head to enter their strait in any position. The child was alive, and Dr. Woods had already advised operation, as forceps could not be successfully applied. She was taken in the ambulance to the hospital, after 1-4 gr. of morphine had been given to ease her sufferings. The operation, at 10 A. M. was the easiest one I had undertaken, the child being delivered

in one and one-half minutes. It lay in a normal position, but plainly showed that no attempt at shaping the head to the pelvis had occurred. Once more we had a boy, weighing eight pounds, and again the mother and child made a perfect recovery, healing by first intention, and sitting up on the twelfth day, and going home in three weeks.

The pelvic measurements in this case were very much diminished, showing between ant. sup. spines only 22 cent. or 8 3-4 inches. Crests, 27 cent. or 10 5-8 inches. Conjugate, outside diam. 18 cent. or 7 1-4 inches.

Another very interesting bit of history in this case is the fact that this mother was one of triplets herself. She very proudly brought me the boy's picture taken at six months, which is the No. 6 herewith. The after-examination of this woman showed beyond a doubt that no other means would have brought forth a living child, and that the mother would certainly have suffered severely if attempts at delivery had been made in any other way.

Case 7.—This is my last case to date, and is very interesting to me because it furnishes an entirely different picture from the others. This also was a patient of Dr. Woods. He had anticipated trouble and had spoken to me in advance about her. She was Mrs. F., æt. twenty-nine, a dwarf in height, owing to a forward curvature of the spine and its resulting shortening of the body. She was very fleshy and it was difficult to examine her satisfactorily. The uterus was drawn up high out of the pelvis, and it and all the abdominal contents overhung the pubes. The pubic arch was very narrow and came to a sharp point in front. The os was somewhat open, waters intact, and pains becoming regular, as full term was at hand. We removed this patient to the hospital and operated as before, Dr. Woods assisting me. I was called to the house at 1 A. M., and we operated at 4 A. M. This proved a difficult case to operate as the intestines were adherent to the abdominal wall nearly up to the navel, and we had to extend the incision two inches above this point before we could reach the uterus. Fortunately they were uninjured, and the womb was opened and the child extracted as before. (Note:—This is the only case in which I found any call to carry the incision above the navel. I can see no call for the long incisions usually advocated and consider them needlessly mutilating. If some such

complication as I have described is found, it is easy enough to enlarge the incision.)

It took us thirty minutes to deliver this child, and it was my first female child delivered by this method. It weighed eight pounds. I sewed up the uterine muscle with No. 2 chromic gut, and the peritoneum with No. 1 plain.

The left ovary and tube were found badly diseased and buried in adhesions, and they were removed. The right tube was then occluded at both ends by ligature. Drainage was pushed down through the cervix as before. Layer stitches closed the abdominal wall. The pelvic measures in this case were, ant. sup. spines 8 5-8 inches, or 22.5 cm. Crests 11 inches, or 30 cm. Ext, conj. 6 1-2 inches, or 16 cm. Barring some trouble with one breast, due to flat nipples, recovery was without incident.

We have here, then, seven cases of Cæsarean section, with uneventful recoveries of all the mothers, or 100 per cent. The children, too, were all born alive, one succumbing in one hour from causes in no way connected with the operation. Final results, covering periods of eleven years to six months, are thus 100 per cent. and 86 per cent.

The cases were operated for placenta previa, 1 case; curvature of the spine, 1 case; cancerous mass in the broad ligament and lower part of the uterus, 1 case; cases where the pelvic bones were contracted or too small in proportion to the bones of the child's head (the largest child was eight pounds, so the indications may be much stronger in larger children), in 4 cases. This shows quite a diversity of field in so few cases.

Conclusions.—I have noticed that there is less lochial discharge reported in these cases than is usual, probably on account of the cleansing of the uterine cavity before closure. I have usually swabbed it out with hot saline on gauze sponges.

In my last case I had a new experience, which I can see now is likely to occur in any case. After the legs and body were lifted, the uterus contracted so promptly that it grasped the child around the neck and required considerable force to remove it. (Trouble with the "after-coming head.")

I have measured the incisions after complete contraction of the abdominal muscles in four of my cases and find that the scars are about three and one-half inches. One was much longer, as reported above, and the other two I cannot trace.

Of course there is a boundless field for discussion of the relative merits and adaptability of this and the Porro operation, of the operation of symphyseotomy and pubeotomy, of the complications due to the presence of fibroma, etc., but the field is too large for this paper, and I have purposely confined myself to the details of my own cases and the conclusions which I could draw from them.

Some recent reports of Cæsarean work are, Drs. Markoe and Davis of New York, 50 cases in hospital, with 6 maternal deaths. Dr. Baldwin of Columbus, Ohio, 9 cases of Cæsarean section, one of which was a Porro, saved all patients. Johns Hopkins Hospital reports, 11 cases with 1 death, and Columbia Hospital, 10 cases with 1 death. These are the most recent reports that I find published.

After Cæsarean section, the question of occluding the tubes to prevent subsequent pregnancy, is to be considered, and must be decided by the desires and physical condition of the mother, and other factors which will suggest themselves in the individual case.

The round, uninjured heads of the babies born in this way, are very suggestive, and are certainly arguments in favor of the operation, as they certainly are free from many of the complications to the infant which result from the use of the forceps.

We know that mothers in full term are especially resistant to the dangers of hemorrhage and of shock, and the only other real danger liable to be encountered is sepsis. And our advocacy of a good hospital, where possible, with its perfect equipment, is the best guard against the latter, though it is not at all necessary to confine the work to hospital limits.

The claim that I want to especially urge for this operation, is in those unfortunate cases where repeated still births have occurred from disproportion of maternal pelvis and fetal head, and in that always serious complication, placenta previa. I am aware that I am in advance of settled teachings in this position, but I hold to it nevertheless.

In conclusion, I am sure that perforation of the living child is no longer justifiable.

THE CONSIDERATION OF THE ANATOMICAL AND PATHOLOGICAL CONDITIONS OF THE PELVIC ARTICULATIONS.*

BY JOEL E. GOLDTHWAITE, M. D.

That which I have to present seems to me from a considerable observation to be a subject of greater importance than is commonly supposed, touching as it does almost all lines of medicine and surgery.

In the first place, it has been clearly shown that the pelvic articulations are true joints, having motion, with all the structures peculiar to joints. That with all persons, whether man or woman, whether the child or the adult, in a normal state of health, there is motion in all three of these articulations. The next anatomical fact which must be recognized is that these articulations depend for their support and for their stability upon the muscles and ligaments. In the hip, for instance, you have a socket with the round head of the femur fitting into it. There is a certain amount of osseous stability in the joint. In the knee there is very little tendency to displacement, as you have a direct end-to-end opposition. In these joints you have oblique surfaces, so that the stability depends on the muscles and ligaments.

Once we recognize the fact that in these articulations we are dealing with true joints, we have to admit that they are liable to disease as are other articulations and from their formation are more liable to injury and strain than are the other joints. The important motion is that of the sacrum upon the ilium or the ilium upon the sacrum, and the motion is practically a tilting of the sacrum upon a transverse axis. This causes a change in the antero-posterior and lateral diameters, a fact which is of obstetric importance. That which changes the diameters at the brim causes the reverse changes of the diameters at the outlet.

In pregnancy there is a physiological relaxation of all of these joints, and at every menstrual period, this relaxation is also present. This is an explanation of many of the backaches, and is the reason why exercise should be modified at that time.

The next thing we have to recognize is that the pelvis represents the attachment of the muscles which support the frame

*Read before the Mass. Surg. and Gyn. Society.

of the body. The high muscles are attached to the pelvis and extend below. The trunk muscles are attached and extend above. Without doubt, anything which lessens the stability of the pelvis or the base naturally is followed by a reflex weakening of the muscles which depend upon that base for their support. In a great many of the so-called functional conditions the relaxation of the pelvic articulations, so that it is impossible for the muscles to get the proper grip for their attachment, explains the condition which is present. This relaxation is the cause of some of the relaxation of the pelvic organs and also plays an important part in the production of enteroptosis.

These joints are more liable to strain than any of the other articulations. The most common symptom of strain in these cases is that which we experience after long stooping. That is nothing but the strain of these articulations brought about by the fact that the muscles tire as they do anywhere else, the strain there being put upon the ligaments. If in that position weight is suddenly added we have the sensation spoken of as a "stitch in the back." This is usually nothing but a sprain of these articulations. The movement has been carried a little farther. You have a true sprain, relieved the same as you would treat any other sprain, with a perfectly normal recovery, if properly treated.

The sacrum is relatively in the position you see in this preparation when the patient is lying down. After the patient has been in that position for a certain length of time the muscles tire and the lumbar spines sag, and necessarily, the sacrum is drawn down, a condition which is increased if the buttocks are large or the waist small. This drag is increased by a bed or surface which allows no yielding, or by anything which throws the muscles out of use. This is the explanation of the post-operative backache, and this can be controlled by the recognition of that anatomical condition. A pillow placed under the hollow of the back of the patient will prevent and relieve this backache. Any position which is kept for a long time without opportunities for movement will be followed by that strain and can be relieved in this way.

That presents the subject in a broad and hasty way, but this condition is responsible for many of the symptoms which have been obscure. The only other thing which I want to call to

your attention is that there are many referred pains that are due to this. By far the greater number of cases of sciatica are due to it, and are corrected at once if you understand the condition and supply such support as will lessen that strain. In such cases make a more thorough examination, especially with reference to these articulations.



SHALL WE BE GUIDED IN OUR TREATMENT OF UTERINE FIBROIDS BY THE EXISTING STATE OF THE PATIENT AND THE TUMOR, OR BY THE NATURAL HISTORY OF THESE GROWTHS?*

BY EDWIN A. NEATBY, M. D.

Let me begin by making clear the nature of the question concerning which I am asking your consideration.

In our treatment shall what the French call the *état actuel* or the probable progress of a case of "fibroids" guide us in treatment? By way of example: Suppose a patient with a small raised nodule on the cervix uteri near the os. It is a somewhat wart-like growth, which bleeds slightly when touched. The patient is ruddy, well-nourished, able-bodied, and suffers no pain. The microscope shows that the nodule is an epithelioma. It is apparently causing no suffering, no injury, no inconvenience, but in spite of that you decide at once to remove not only the tumor but the whole organ. Here the decision is based, not on the present condition of the patient but on the known progress or natural history of the disease. The case is "malignant"; if left alone the result will be death, and you do not hesitate to operate. Or, if you do not operate, it is because you believe there is something behind the nodule which the knife cannot reach—not because the condition is so unimportant as not to warrant surgical measures.

But it will be pointed out that fibroids are non-malignant growths, and must not be compared with cancer. Take, then, an ovarian cyst. When its presence is determined it is regarded as proper treatment to remove it, whether it be the size of a tennis-ball or a football, irrespective of any symptoms present or absent at the time of its discovery. Here, again, the

*Presented to the Section of Surgery and Gynecology, Jour. of the British Hom. Society.

treatment is based upon what will be rather than on what is. Though the tumor is non-malignant, and is doing no obvious harm, you remove it because you know it will do harm if left to itself. There is little or no tendency to spontaneous recovery in such a case. At the best it will remain stationary, and perhaps cause peritonitis or dystocia. In the ordinary course, if left alone it will go on growing indefinitely, till the patient dies from mechanical embarrassment of the heart and lungs.

There are no two opinions as to the propriety of operation in such cases, for there is no prospect of an involution of the growth at a certain stage in sexual life. With fibroids it is different. There is at least a tendency towards recovery in some cases, when the activity of the sexual glands ceases. Is this tendency sufficient to make us say: "Yes, the tumor will probably go away by itself if you leave it long enough, and we will let it alone and give nature a chance, unless it is really endangering life or seriously impairing the health?" We can only answer the question by considering some of the facts. Let us tackle them at once, and take examples of some of the favorable ones first.

Some years ago I was asked to see my coachman's wife, suffering, I was told, from bronchitis. She was sixty years of age. When examining her I discovered she had a solid uterine tumor extending to a point about three inches above the umbilicus. She had never known of its existence. She always had a "high stomach," but was never, as far as she knew, either better or worse for its presence.

Miss W. was a lady, aged forty-three, who had carried about an abdominal tumor for many years, ignorant of its presence, able to walk, dance, and skate.

Mrs. M. was a lady I treated for many years for menorrhagia due to a fibroid. She was forty-four years of age when my observation of her case began—fourteen years ago. She had also tachycardia and proptosis, probably not connected with the growth, as she had had them since girlhood. I watched the tumor grow for two years, when it reached the height of one inch above the umbilicus. During the next six months with menstruation gradually lessening in quantity and frequency, the tumor diminished to half inch below the umbilicus. When I last saw her, two or three years ago, the tumor had practically disappeared.

Almost the same series of events in the last-named case, has, in a recent hospital patient, unfolded itself before my eyes and ended equally favorably. These are four cases which spring into my mind as I sit down to write this short paper, and they are but examples of others of my own, and of facts familiar to every practitioner.

Though presenting slightly differing features, they are brought forward as examples ready to hand of the widespread belief that uterine fibroids are usually very innocuous; that they can often exist unknown to the unsuspecting host, or if recognized, may generally be patiently put up with until the friendly menopause steps in to starve out the intruder.

But there is growing evidence to show that the innocence of these growths has been over-estimated. Even in my cases, selected as instances of their benign character during a prolonged period, there are flaws; for I believe the tumor in the first case embarrassed breathing so much as to turn the scale against the patient: she died. In the second case, after a long peaceful existence, the tumor took to severe bleeding. In the other two, one may think, "all is well that ends well;" but, unfortunately, we cannot be sure that the last has been heard of them.

Miss F. L., sent to me in November, 1902, had passed the menopause for a much longer time than have these two cases. She was fifty-nine, and had ceased to menstruate for nine years. Under Dr. Moir's care for her general health, she told him of a watery vaginal discharge, offensive and occasionally brown, and of several attacks of loss of bright red blood. The lady was sallow and losing flesh. Strange to say she had previously been under the care of a well-known non-homeopathic gynecologist for many years, and he had deprecated any interference on the ground of this discharge, stating that it was of no importance, and might be due to a mucous polypus. (This is a hearsay report, but was made to a medical relative of the patient's, who communicated it to me.) She had a fibroid filling the pelvis. With Dr. Moir's concurrence a preliminary curetting was done, and the diagnosis of adenocarcinoma of the body of the uterus established. This was followed by total hysterectomy. In November, 1905, a little "bouton" was observed at the right extremity of the vaginal scar, which caused me anxiety. Upon excision it proved to be

only granulation tissue around a silk ligature, of which I show the slide here. She recovered her nerve tone after considerable treatment, and is now, more than four years after the operation, well and giving no anxiety.

A. M., a married lady, aged forty-four, who had had one child and one miscarriage. She came under my care in August, 1899. At the beginning of that year she was alarmed by the onset of a continuous, watery, offensive discharge, together with a dull aching in the lower abdomen, much aggravated on exertion. There was also pain at the period, and before and after defecation and micturition. She had a large abdominal fibroid, and the cervix was the seat of cancerous ulceration. In the hope of alleviating the pain and removing the discharge, panhysterectomy was at once performed. The patient made a good recovery from the operation, but an early recurrence took place. Though this lady was under medical care, the gravity of the early symptoms was overlooked, and the life of a highly intellectual member of society was thrown away.

Mrs. M., aged fifty-five, sent to me by Dr. Epps, had had a fibroid uterine tumor for many years, and had menstruated regularly until fifty-four years of age. From January to September, 1906, menstruation was absent, but after that, until I saw her, a reddish discharge was present, amounting occasionally almost to a "flooding." Thus, after waiting patiently many years for the menopause, she was mocked by a delusive nine months of amenorrhea. During this time the fibroid did not disappear. Indeed, even while bleeding was suspended, nature was preparing a terrible awakening for her false security. The history led Dr. Epps to suspect a malignant development, and I could only confirm his worst fears. The fibroid extended half way to the umbilicus, and as regards its abdominal portion was fairly freely movable. The cervix was lacerated and enormously hypertrophied by cancerous growth. No ulceration of the vaginal surface was present, but the left fornix was involved. It was not a favorable case for operation, nevertheless as complete as possible a removal of the growth by dissecting it out from the left broad ligament was carried out in February of this year. It is too early to speak as to recurrence. The patient is placed on cacodylate of soda and will continue under observation.

J. M. is a lady with a very similar history to the last named.

She had waited many years in the hope that the menopause would remove the uterine fibroid, the bleeding from which kept her in a perpetually anemic and exhausted condition. Until her fifty-sixth year she had regular periods, and for six months previous to 1904 they lasted from seven to fourteen days. Then came a respite: the intervals lengthened, the quantity lessened, and the tumor diminished in size. Menopausal flushings, etc., were very distressing. The last definite period took place in the autumn of 1904. After an interval of eighteen months, offensive discharge set in. By this time the uterus had shrunk to the size of a largish tangerine orange and occupied the junction of the cervix and body, the corporal mass being no longer felt. The diagnosis of cancer was made on the clinical history, and abdominal panhysterectomy performed in October, 1906. It was felt that even if the diagnosis were not upheld after operation, it was time to be rid of an organ so constantly causing trouble. A good immediate result followed.*

Both this patient and the last had borne children, one four, and the other; the last child being about twenty years of age in each case.

Miss U., a hospital patient, aged sixty-six years, had passed the menopause fifteen years when she began to have foul discharge and then to bleed. For a year the hemorrhage continued uninterruptedly, until her operation five weeks ago. A very nodular fibroid was found—some nodules being simple myomata, some having undergone calcareous degeneration, and one large module being carcinomatous.

That these are not isolated instances is shown by cases referred to by a number of speakers at the Berlin Gynecological Society. Fleischlen relates the case of a woman, aged fifty-six, eight years past the menopause. The patient had had hemorrhage for fourteen days, otherwise she felt very well. The mucous membrane covering the surface of the myoma had almost entirely undergone carcinomatous degeneration, and also the adjoining portion of the opposite uterine wall pressed upon by the tumor.

Babb related a most interesting and rare case of cancer of

*In July, 1907, the infiltration in the left broad ligament at and after operation has nearly cleared up. The patient has steadily taken neoformans vaccine by the mouth once a fortnight, with occasional weeks of ars. iod.

the cervix, associated with an adeno-myoma of the body, itself undergoing malignant changes. The former was an epithelioma, and the latter an adeno-carcinoma.

Winter referred to no less than thirty-six cases of myoma and carcinoma, of which twenty-three were corporeal.

Koblank quoted the case of a woman, aged fifty-two, who had had hemorrhage for one year, beginning four years after the cessation of menstruation.

Amos recounts a similar case of irregular hemorrhage for one year, two years after the menopause. The intramural myoma was the size of a fist, and a small malignant polypus was found in the cavity.

I will not weary you with a recital of more cases bearing on this point. Enough has been said to show beyond a doubt that when a myoma patient has weathered the storm and arrived at the menopausal haven her dangers are not over; she may still make shipwreck. The obvious reply is that the rock on which she later comes to grief is not that near which she so long steered a perilous course—that sailing safely past Scylla does not lessen the danger of colliding with Charybdis. In short, to quit the not very comfortable figure of speech, it may reasonably be argued that the sequence of myoma and carcinoma is merely a coincidence; that cancer comes in women both before and after the menopause, whether they have previously had a fibroid or not, and that no one has ever contended that the sufferings a patient goes through (or does not go through) with a myoma, protect her against carcinoma. If this is all the facts warrant us in saying, it is still worth while to have our beliefs thus supported by evidence. But do facts and theories lead us to the conclusion that we have been right all along, and that we have only to go on believing as we have believed, and doing as we have done, to secure the greatest good of the greatest number?

If I were arguing, instead of trying to let facts argue for us, I should say the contention is that a uterine myoma, so far from protecting from cancer of that organ, predisposes to it. Speaking theoretically first, it seems a reasonable enough assumption that the presence of a new growth in this organ would alter unfavorably its nutrition, and so lessen its resisting power. This argument would hold good, whether cancer is held to be of microbic origin or not.

The next item of evidence is, that supposing the theory to be correct that a myoma influences nutrition unfavorably, as corporeal myomata are more common than cervical, cancer of the body (in corporeal myomatous cases) should be more common than cancer of the cervix.

Now, taking the figures from non-myomatous cancer patients, Noble of Philadelphia shows that cervical cancer is ten times more common than corporeal, whereas in a series of 2274 myoma cases there were more than two and a half times as many body cancers as cervical ones.

There were 43 corporeal myomatous to 16 cervical cases. The usual non-myomatous ratio for 16 cervical cases would have given 1.6 body cases instead of 43.

In 4880 fibroid cases 2.8 per cent. of cancer occurred. In smaller consecutive series of 337 and 100 by Noble, the percentage was 4 and 8 respectively.

In a series of 4267 gynecological cases of all sorts under my own care, 96 had cancer and 281 fibroids: That is, 2.24 per cent. of non-myomatous patients had cancer; of the fibroids, 14 had malignant disease, giving a percentage of 4.98 of cancer—rather more than double the percentage in non-myomatous patients.

These figures are probably well below the truth, for it often happens that when a uterus is removed for cancer, a fibroid is found and no note taken of it, because the myoma is regarded as of no importance compared with the cancer.

In Noble's collected cases (2274), with other intrinsic complications, e. g., sarcoma, chorio-epithelioma, necrosis, cystic degeneration, and twisted pedicle, the mortality of fibroids, if left to nature, is shown to be 12 per cent. When it is remembered that a 5 per cent. mortality in cases operated upon is an unnecessarily high one, a strong argument is advanced in favor even of excision in all cases.

Taking into consideration the extrinsic complications of myomata, a larger percentage of naturally fatal cases is obtained, and a still larger number of patients lead a life of chronic invalidism until the menopause or after.

A very large proportion of my own patients, who had associated cancer and fibroids, had borne children.

In endeavoring to answer my own question, I should say that if we were obliged to operate on all our cases or on none,

it would be better to operate on all; that if we operate on all we should operate needlessly on some; that in deciding as to operation, the natural tendency to complications and degeneration should be allowed much more weight than formerly, but that we are not justified in being guided by that alone.

In deciding upon operation I would adopt a different standard for young women, say up to thirty-six or thirty-eight years, and for those of forty-four years or more. In the case of the former, I should say that a reason should be required for retaining a fibroid. In the case of the latter, with a symptomless tumor of equal size a reason for removing it should be required.

And now a few supplementary words as to the recognition of cases of cancer. In the first of my above-narrated cancer-fibroid cases there had been offensive discharge and bleeding for months before it was recognized; a well-known non-homeopathic gynecologist had said 'watch; probably it is a polypus.'

In another of the cases which I have related, the same thing happened under the case of a homeopathic practitioner. Nearly a year ago a post-menopausal patient came to this hospital with similar symptoms, and the verdict was "you must be watched," and she was watched until far advanced cancer had declared itself.

A few weeks ago a colleague in the provinces asked me to see an elderly lady who had discharge and bleeding. She had been to a London gynecologist (not a homeopath), who assured her "there was nothing there." Only a few months after this pronouncement, not content with the *ex cathedra* verdict, my friend asked me to see her, and I found a large corporeal cancer, verified by operation.

Why do I take up your time by referring to these cases? You all know that post-menopausal discharge and bleeding usually means cancer. The same was true of all the medical men who saw the patients I have just referred to. Yes, we all know: and yet such cases are constantly coming to the surgeon and the gynecologist. In theory and in an examination paper—yes, we all know.

How long will it take to burn it deeply enough into the brain of us that these symptoms are vital, perhaps mortal; that they mean not watch, but act; that the diagnosis, at the

earliest possible moment, must be removed from the realm of probability to that of certainty? How long will it take us to learn, so as to act upon the knowledge, that irregular hemorrhage is not to be calmly accepted as one of the incidents of the "change of life"?

There are, alas, all too many cases quite undiagnosable without an examination, and having no signals to make us examine; where there are danger signals let us heed them, and save the lives of some who are ready to perish, but who may be saved by a policy of promptitude.



THE DIAGNOSIS AND TREATMENT OF FEVER DURING THE PUERPERIUM.

BY HUDSON D. BISHOP, M. D.

It would be ideal if after the successful termination of labor one could banish the temperature chart from the lying-in chamber, for I know of nothing that causes so much worry as a rise of temperature. It may mean nothing to the physician who is careless in his technic but to one who has carried out a conscientious plan of asepsis during the conduct of labor a rise of temperature above 100.4° F., should be and is a serious complication until its cause is known. After the cause is determined, however, the matter of treatment is simple and at least not always a cause of worry. But too often, I regret to say, the physician makes light of this condition and in his own mind, perhaps, and invariably to the patient and family, ascribes the abnormal symptoms to some condition such as la grippe, or nervousness. If he does this simply through ignorance he cannot be condemned except for it. But if knowing that something is radically wrong, he does not immediately make every effort to locate and treat the trouble but trusts to luck, he is to my mind guilty of a serious breach of duty not only to himself but to his patient.

In this paper, I shall only consider briefly the most common conditions which cause a rise of temperature during the puerperium and point out the principles of their treatment. The point which I would emphasize throughout is that barring a few exceptions, early diagnosis of the cause of the temperature

will enable one to institute treatment which will abort most cases of serious sepsis.

The more common causes of fever during the puerperium are as follows:

CONSTIPATION.

The puerperal woman seems to be especially prone to an auto-intoxication arising from the absorption of toxins from the intestinal tract. Experience shows that one-half or more of the rises of temperature above 100.4° F. are due to this cause. The rise is usually not more than two or three degrees but I have often seen a temperature of 104° F. disappear after a thorough evacuation of the bowels. The fact that constipation is such a frequent cause of fever and that its relief is so simple undoubtedly accounts to a certain extent for the unconcern with which physicians look upon the appearance of fever.

I believe that the safest plan to follow in cases which have all the appearance of an autointoxication fever is to treat them as such but at the same time seek for other possible causes. Too often we think we have done our duty when we order a cathartic, supplemented perhaps with an enema, when later we have found that there was something else to treat besides the constipation.

SURGICAL FEVER.

There is a physiological rise of temperature of from one to two degrees after labor but frequently after prolonged and difficult labors there is a rise of from three to four degrees within the first twenty-four hours that is due to the unavoidable absorption of bacterial toxins during the conduct of labor. But they are not in sufficient amount to overcome the protective forces of the body, and within twenty-four hours the temperature drops to normal or nearly so. To one who has confidence in his obstetric technic, this temperature means nothing but if the technic has been imperfect, such a temperature should cause great concern because the most serious forms of puerperal infections begin with high temperature immediately after labor.

Surgical fever requires no treatment beyond the ordinary precautions which are to be taken towards a conservation of the patient's normal resisting power. It is usually safe to consider

a rise of temperature during the first twenty-four hours as a surgical fever but if the clinical picture does not change at the end of the twenty-four hours other causes for the temperature must be sought.

DISTENDED BREASTS.

In the preaseptic days, a fever coming on at the time of the establishment of the milk secretion was called a "milk fever." While our present knowledge of infection shows us that this idea was incorrect in many cases, yet recognition must be given to a temperature rise that is due to a too rapid engorgement of the breasts, the condition being what is commonly called "caked breast." This temperature seldom rises above 101° F. and disappears as soon as the distention is relieved.

Distention of the breasts with nodular hardening can be prevented by the application of a breast-binder while the milk secretion is being established. Properly applied, with graduated pressure, it will prevent distention. If such prophylactic treatment has not been followed and the engorgement of the breasts is sufficient to produce hard and painful nodular areas the most energetic treatment is necessary to relieve the distention which, if allowed to persist for any length of time, will predispose to infection by lowering the vitality of the tissues. Everything depends upon the nurse in the treatment of this condition. She must massage the breast until the lump is softened. Vigorous nursing, supplemented by the breast pump, will remove the milk and in addition the amount can be diminished by catharsis and a restriction of the liquids in the diet. The ice-bag is a valuable aid in overcoming the congestion which is always present.

MASTITIS.

Mastitis seldom develops before the end of the first week and often it is considerably later. It is always due to infection from pathogenic bacteria which have gained entrance to the breast through the nipple. Its first symptom is an engorgement of the breast with the formation of a focus of infection, which is greater or less in extent and has all of the local symptoms of a localized inflammation. There is usually a chill, followed by a rise of temperature of from three to five degrees.

If the diagnosis is promptly made and thorough treatment at once instituted, a beginning mastitis will usually clear up in twenty-four to forty-eight hours.

Diametrically opposed methods of treatment are used in a beginning mastitis. One is to put the breast at rest by means of a compression bandage. Nursing is discontinued and if necessary to relieve the distention the milk is withdrawn with the pump. A better treatment, I believe, is persistent deep massage until the hardened area is softened, emptying of the breast with vigorous nursing and the pump, saline cathartic with dry diet, and the application of the ice-bag during the intervals between the massage.

If the inflammation is not aborted within twenty-four to forty-eight hours the temperature will become a pus temperature and the local symptoms will be those of an abscess. The most prominent of these is localized pain, which with the temperature is all that is necessary to make a diagnosis of abscess formation.

I believe in early excision of breast abscess. It is a surgical mistake to wait for fluctuation before incision. The surgeon should go after the pus and not wait until it has come to the surface. The incision should center directly over the most painful part of the hardened area and be in a line radiating from the nipple. An important part of the treatment of breast abscess operation is the packing of the wound, so as to convert it into practically an open wound that will heal from the bottom up or at least remain open until the tissues have recovered their normal resisting power.

SAPREMIC INTOXICATION.

The absorption of toxins resulting from saprophytic infection is the cause of by far the largest number of rises of temperature from septic causes. The condition is essentially a toxemia as distinguished from a bacteremia, the source of the toxins being some decomposing matter within the cavity of the uterus. A sapremic temperature may occur at any time during the puerperium and always means that there is a retention of decomposing substances within the uterus. The time of its occurrence is an important factor in determining the cause. If early in the puerperium there is retention of placental tissue

and membranes; if late, there is rétention of lochial discharges. The rise in temperature is usually a gradual one, though in some cases of low resistance there is a very sharp rise of from three to five degrees. The lochia is always foul and decomposed and it is more liable to be diminished in amount than to remain normal. The uterus is soft and boggy. The symptoms persist and become of increasing severity until the cause is removed. In many of these cases, especially those due to retained placental tissue, there is a co-existing bacteremia which, however, is of secondary importance so far as treatment is concerned.

The treatment will depend upon the cause of the sapremia. If there is retention of placental tissue, etc., the only rational treatment is to explore the uterine cavity and remove the decomposing mass. Under careful technic, an intrauterine irrigation is given and this is followed by digital exploration of the uterine cavity. It is better to use the finger rather than an instrument to locate and loosen any retained tissues. If the exploration is carefully done so that all the débris is loosened it will all come away with an intrauterine irrigation. As a usual thing, the intrauterine irrigation should not be repeated but if the cervix has involuted sufficiently to interfere with drainage intrauterine douches will have to be continued until the uterus has cleared itself of all the decomposed tissue. The loss of muscular tone is always marked in these cases and requires appropriate treatment. I have found that very hot vaginal douches, repeated at intervals of six hours, aid in restoring the muscular tone. The douches are continued until the lochial discharge returns to its normal amount.

A frequent cause of sapremia during the latter part of the puerperium is the retention and subsequent decomposition of lochial discharges as a result of displacements of the uterus. Such displacements are a frequent result of improper posture during the lying-in and of over-exertion during the first days after getting up. The retention is purely mechanical and the treatment consists in restoring proper drainage through the cervical canal by placing the uterus in its normal position. If the cervix has involuted sufficiently to interfere with drainage it must be dilated.

The rise of temperature following emotional disturbances such as fright, grief, anger, or any unusual excitement is prob-

ably due to a retention that has been brought about by a relaxation of the uterine tissues. I have frequently seen such a temperature disappear after an intrauterine douche.

SEPTICEMIA.

A septicemia from direct invasion of the blood current by bacteria may occur at any time during the puerperium but is more frequent during the first few days, when there are many points through which infection can gain entrance and when the resisting powers of the patient are lowered. There may or may not be a localized infection. If localized it may partake of the character of an infectious endometritis which later will take on the form of a saprophytic infection. Or an old pyosalpinx may be aroused into activity and pass through its usual course. When an infectious inflammation of this character is set in motion there can be no definite prediction as to the course which it will take. It may extend from the original focus along the blood vessels or lymphatics and produce a metritis, pelvic lymphangitis, parametritis, general peritonitis, or the various forms of phlebitis.

The treatment of a puerperal septicemia is supportive treatment in the main, with such treatment of the localized conditions as they arise, as is indicated. The mistake most often made in the treatment is that the seriousness of the condition is not recognized and supportive measures are not begun in time to enable the patient to overcome the invading microorganisms. In addition to the methods of maintaining nutrition which are followed in typhoid fever and other severe infectious diseases I have had good results from the saline infusion given by continuous hypodermoclysis. Since Wright's work with his method of determining the opsonic index has been known there have been a number of cases reported in which bacterial vaccines have been used with success in the treatment. There is much diversity of opinion as to the indications for surgical interference in puerperal septicemia, this being particularly true of curettage. My experience has been that this operation is detrimental except in those cases in which there is a saprophytic endometritis as a complication, and in the majority of these cases it should only be done when there are very definite indications of a retention of *débris* within the uterus. As a general operative procedure, I believe that the

best results are obtained from what is called Pryor's operation. This consists in opening up the cul-de-sac and packing the pelvis with iodiform gauze. It is a conservative operation and should be resorted to in every case when the infectious inflammation is not speedily limited in its extent.

I might be criticised by some for not having made any reference whatever in the consideration of this subject to the various laboratory methods which are available for accurate diagnosis. I have two reasons to give for this omission. In the first place I do not believe they are necessary to an accurate diagnosis in the majority of cases, and in the second place the average physician does not possess the technical knowledge necessary to carry them out and while awaiting the report of the bacteriologist he is losing valuable time. I do not wish to be understood as deprecating clinical methods of diagnosis in general but in everyday obstetric practice I have not found them as helpful as in some other fields of practice. It is only in rare instances that it will be found necessary or desirable to resort to a bacteriological examination of the lochial discharge or the blood to secure a good working diagnosis. Everything necessary for treatment can be secured by a careful and intelligent consideration of the history of the case, the physical signs, etc. After the diagnosis is made the prognosis will depend entirely upon the thoroughness with which well-recognized principles of treatment are carried out.

Current Comment.

Cash Reed, M. D.:

The failure to improve a given case of dysmenorrhea, e. g., has resulted in the temporary interment of many a budding reputation. If, however, the fact that *rheumatism is a most important contributory agent to pelvic pain* be more widely grasped by what I submit, patients will be benefited, and my friends' reputations maintained.

Mrs. X., about the menopause, with a grown-up family, consulted me, a month or two ago, for pelvic pain, referred to the hypogastrium, relieved by movement; in fact, she could sometimes walk a couple of miles, when it would recur. It was

worse in bed, frequently waking her up in the small hours, and worse also on turning in bed from one side to the other. She thus frequently had to rise at night to apply a mustard leaf in order to get relief.

Some seven years ago she had a child born, in a remote country place, with the complication of placenta previa. The exigencies of the situation resulted in a very prolonged illness, the pelvic factors of which were cellulitis and endometritis. For the latter curetting was done. When I saw patient she complained also of pain in the right arm, with, after use, the usual paretic condition associated with a neuritis. She told me she had had expert advice, and was assured that there was nothing wrong internally; in fact, that the condition was conspicuously normal. On examination I found a great number of cicatrices with their falciform edges in relief, in the right and left vaults of vagina and in Douglas' pouch. The uterus was in normal position, but painful on movement.

Here was the key to the situation. Before examination sundry remedies had been employed without conspicuous benefit. Now salicylate of soda (natural) in five-grain doses, three times a day, was given. The result was dramatic. The patient has now gone to a distant point, in the confident assurance that all will be well, and in this I believe she is correct.

Mrs. B., aged thirty, complained of intermenstrual discharge and pain (*mittelschmerz*), green leucorrhea, dyspareunia, and hemorrhage after coitus. She had had three dead-born children. On examination I found a tear on left side of cervix, with nodular edges, and metritis also. The introitus was healthy, so the dyspareunia could not be due to a lesion of that part of canal. In view of the likelihood of syphilis in this case I gave merc. cor. with distinctly satisfactory result, but the case only partially cleared up. At an interview now she volunteered the information that pain in the womb was much worse in damp weather, and that coitus was specially bad then. She added that she had been subject to rheumatic pains. She was therefore ordered sod. sal., gr. v., t.d. At her next visit my notes say: "Patient is wonderfully better in every way, and she says 'the discharge after coitus and all the other symptoms are gone.'"

I should like to have cured these cases with distinctly homeopathic remedies, but I did not. Sometimes one employs

antagonistic remedies with the object of clearing up some ambiguity about a case, that is for diagnostic purposes, and it sometimes happens in such a circumstance that the patient is cured! If the patients referred to require further treatment, I shall probably give a course of bryonia, or actea and baths, and waters rich in sulphur. This last, by the way, combined with guaiacum, was a great remedy of the late Matthews Duncan. The combination is significant. I see in the latest publication I have come across on "Dysmenorrhea," viz., that by Herman, the writer lays stress on guaiacum, which seems to be his sheet-anchor in cases of this trouble. One may just mention also Dr. Luff's experience with guaiacol in rheumatic conditions. In the light of the evidence adduced I think it is quite obvious that cases of pelvic pain should be investigated in the light of a possible rheumatism underlying all.

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C. D. Palmer, M. D.:

On the question as to whether *craniotomy* is ever justifiable on the living child, I take the position that it is possibly justifiable to kill a living child for the mother's sake. The occasion for such a procedure is very rare. I have never seen but one such case. It was in consultation with the elder Dr. Carey, and I think there was some other physician present. Dr. Carey was called in after the failure of a midwife to deliver. The woman had been in labor for a long time when I saw her; was exhausted and somewhat septic; forceps had been used. I used them then myself and failed. With the stethoscope I could detect the fetal heart-sounds. Upon examination I found the woman's pelvis distinctly deformed—the ordinary rachitic pelvis. I recommended craniotomy, to which consent was given, and the operation was then performed. I believe the woman would have died had not craniotomy been performed. Craniotomy should always be employed as a last resort. The occasions for its employment are very, very rare. It should only be done to save the mother's life, only after prolonged and ineffectual labor; after forceps has failed, after some septic changes are unavoidably encountered, when Cæsarean section would reasonably be contraindicated. Many authorities might be cited supporting such a procedure, under such trying circumstances and conditions.

W. E. Fothergill, M. D.:

I will describe three cases of *injury of the parturient canal*, two of which I saw in consultation and respecting one of which I received a report. The cases illustrate the fact that injuries may occur where there is no serious cause of dystocia, and that lacerations may be produced as easily before as at term.

In the first case the progress of labor was somewhat slow because of an occipito-posterior position, but under an anesthetic the head was rotated and was delivered easily with forceps; the delivery of the shoulders was a matter of considerable difficulty. The placenta was retained, and on the introduction of the doctor's hand into the uterus a tear through which several loops of bowel were protruding was discovered in the posterior vaginal fornix. At a later examination it was found that the hand could be passed straight into the rectum through a transverse tear extending across the vaginal vault; the rectum, sigmoid flexure, and the whole of the descending colon were distended by solid fecal masses. In this case the determining cause of the laceration was the presence of the fecal accumulations and would probably have occurred apart from the delivery by forceps, because there must have been a predisposing cause—an unusual friability of the tissues. The fact that the patient was suffering from melancholia indicates a condition of toxemia which might have some causal relationship with the friability of the tissues.

The second and third cases have certain points in common. In both there was prolonged hemorrhage, followed by the premature expulsion of the fetus at the end of the fifth and seventh months respectively; in each case the fetus had died before delivery. In the first case the doctor was sent for after delivery of the fetus because of retention of the placenta. During the prolonged manipulation needed to separate the adherent placenta it was noticed that there was an abnormality of the posterior fornix. When the patient was examined later in hospital, the posterior lip of the cervix was found to be separated from the vaginal wall by a tear which crossed from the right fornix, round the back of the cervix into the left fornix; the peritoneum seemed to be stripped off the lower two inches of the back of the uterus, and the left broad ligament was split extensively. In the third case labor was artificially induced by means of, first, Hegar's dilators, and later of a

Champetier de Ribes bag. The bag was left in position eight hours, and at the end of that time, as labor pains had not come on, gentle traction on the stalk of the bag was begun, and was continued until dilatation was complete. The fetus, which was absolutely rotten, was delivered piecemeal, and the uterus was emptied and washed out.

On the following morning the patient had a temperature of 103° F. A blunt curette was introduced, and tissue which was recognized to be maternal omentum was brought down. Rather than return the omentum to the peritoneum through the foul uterus, the doctor in charge did an abdominal section, and ligatured the omentum above the point where it entered the uterus. A uterine rupture was found in the lower uterine segment. The doctor who reported the case thought that the rupture had probably occurred in connection with the Champetier de Ribes bag. In the former of these two cases the uterine tissue was thinned and stretched by previous repeated pregnancies, but this fact alone was not enough to account for the laceration. In all probability some form of toxemia is the underlying feature common to the majority of these cases.

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A. P. Condon, M. D.:

I desire to call attention to, and to emphasize a point which I consider of great value, that is, the *uterine decidua as a diagnostic sign in ectopic pregnancy*; a sign which is given little weight in most of our text-books, and is usually forgotten or neglected by the physician. I refer to the microscopical examination of the changed mucous membrane of the uterus.

When a pregnancy takes place, whether it be intra- or extra-uterine, there always occur certain marked changes in the uterine mucosa, and sometimes in the tubes, ovaries, and peritoneum of the pelvis. These changes occasionally have been seen beneath the peritoneum of the intestines.

The cellular reaction which occurs in the mucous membrane of the uterus consists in a flattening of the epithelium, lining that cavity. This change is observed on the surface and around the opening of the crypts of the mucous membrane. In some places the cells become so flattened that they resemble endothelial cells, and in the later months of pregnancy they may en-

tirely disappear. The deep glands become more tortuous and a great change is seen in the connective-tissue cells. These cells become enormously enlarged, the cell membrane becomes more distinct, the protoplasm takes a light stain with eosin, the nuclei become irregularly enlarged, but not in proportion with the cell body for it takes a very light stain with hematoxylin, while the nucleoli take an intense stain.

The uterine mucosa, having undergone the changes just described, is known as the decidua of pregnancy.

The decidua is divided into two layers, a compact and a spongy layer. The compact layer is made up of the large altered connective glands. The deeper or spongy layer is composed of the tortuous uterine glands, held together by ordinary connective tissue, which, later in pregnancy, undergoes some decidual changes. "The decidua formed in the uterus differs only from normal uterine decidua, in a less development of the spongy layer and a greater abundance of blood spaces beneath its free surface."

I do not think it is always necessary to examine the uterine decidua to make a diagnosis of ectopic pregnancy, as oftentimes the clinical signs are so marked that the diagnosis is made without difficulty, but I do believe that it is more constant and more reliable than the other clinical signs. In the past three years I have operated upon fourteen cases of ectopic gestation—eight of these being in the past year. In most of my cases, the patients gave a history of having passed, in the uterine discharge, bits of membranous tissue; but in no case had these membranes been saved, either by the patient or by the attending physician.

What I would urge upon you is the importance of a microscopical examination of all particles of tissue expelled from the uterus in these suspected cases. The microscopic picture is quite simple and is easily interpreted by anyone having had the ordinary training in the microscopical examination of tissues. One would hardly mistake the shreds of membrane expelled in menstruation or a uterine cast in dysmenorrhea, for microscopically there is no resemblance to the decidua found in extra-uterine pregnancy. A differentiation is made between an extra- and intra-uterine decidua by the finding of placental remains in the latter.

A. S. Pendleton, M. D.:

It is my purpose to present the history of some obstetrical cases which seem to me to have been rather out of the usual, and which impressed upon me very strongly the possibilities of *obstetrical work in general practice*.

I was called to see, in consultation, a multipara, aged thirty-six; pelvis normal. Found body of uterus extruded to shoulders, head retained. Uterus firmly contracted. Violent pains at short intervals with no progression. Owing to almost tetanic condition of the uterus, I was unable to determine condition of the head other than that it was apparently larger than normal. Delivery was attempted by all of the usual methods, including forceps, without avail. Finally I thought I was able to detect crepitus through the uterine walls, so made a diagnosis of hydrocephalus, although it was impossible to examine, except through the abdominal walls, owing to the impaction in the pelvis. This diagnosis was confirmed; one-half gallon of fluid being removed by spinal puncture, after which delivery was easy. This case was of special interest in that neither the regular attendant nor myself was called until labor had advanced to the stage described, making the diagnosis especially difficult. The patient made an uneventful recovery. The fetus was dead.

A primipara, aged nineteen, was found in a comatose condition, and a history of having had convulsions at five-minute intervals for the preceding thirty-six hours was elicited. Examination revealed a generally equally contracted pelvis with conjugate diameter about six cm., and the shoulder of seven-month fetus presenting. Cephalic version was accomplished with much difficulty, one blade of forceps being used to bring down vertex, and it was found possible to deliver the fetus per vagina after crushing the head. While there was no laceration of sufficient extent to require suture nor other apparent injury to maternal parts, the patient died eight hours later, never having regained consciousness, and so in my judgment was another victim to toxemia. In this instance neither the transverse position of the fetus nor contracted pelvis had been diagnosed. Had the condition been recognized and relieved at the very beginning of the attack, I am confident that the woman would be alive to-day.

I now wish to direct your attention to a condition which I

find mentioned in most text-books, but to which very little emphasis seems to be given, and which the following cases would indicate is of more importance than our teachers have seemed inclined to believe. It is a condition of the lessening of the angle of the axis of the symphysis with the internal conjugate diameter. This condition materially lessens the antero-posterior diameter of the pelvis without giving any external indication of the same, and therein lies the danger. Here is a condensed history of three illustrative cases.

Was called in consultation thirty-six hours after labor had begun to a primipara, age twenty-three. Pelvis was practically normal from external measurement. Examination showed following condition: Normal-sized, full-term, fetal head not engaged, slightly extended, and in the L. O. A. position, pains apparently strong, from three to seven minutes apart, not effective. Thinning of lower uterine wall and the contraction ring rising. Forceps were applied, and using them as a lever the vertex was brought down, making flexion complete, after which delivery was fairly easy. Recovery of both parent and child uneventful.

A multipara; age thirty-seven. The condition found when called in consultation in this case was as follows: Incomplete flexion at the superior strait of an apparently normal, full-term fetal head. Strong pains not effective. Full dilatation. The patient gave a history of three previous difficult labors, all of which were instrumental, though the largest child weighed only seven pounds. The condition was relieved very readily as in the preceding case.

Primipara; age twenty-six. Had been in labor twenty-four hours when seen. Contraction strong and frequent, but not effective, though there was full dilatation. Bimanual examination showed a condition almost identical with that of the preceding two cases, and the same means brought about the same results.

Subsequent examination in the last three cases showed the trouble in delivery to have been due to the lessening of the angle of the symphysis before mentioned. In each of the cases the external measurements were practically normal. The external conjugate was normal in each. The internal conjugate as usually estimated was normal. It was necessary to use Stein's pelvimeter to determine the true cause of the obstruction.

When this was used, however, the cause was very readily determined, and we wondered why it had not been discovered before. One interesting feature of the three cases is that in every instance the condition of the symphysis seemed to interfere with flexion and this rather than the contraction caused the true obstruction, for when this was overcome by using the forceps as a lever to bring about the proper flexion subsequent delivery was easy, and perhaps might have progressed without difficulty, even though the instruments had been removed. This was not done, however, on account of the weakness of the patients, and for fear of prolonging labor.

I have seen two cases since these enumerated which presented the same conditions, caused the same position of the fetal head, and were relieved by the same means.

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John F. Winn, M. D.:

The obstetrical treatment of the *toxemia of pregnancy* from the American point of view, is the emptying of the uterus as early as possible, and by the most rapid method consistent with the integrity of the mother's parts. American obstetricians are led to this belief by reason of the fact that the mortality of post-partum eclampsia is much lower than that of the ante-partum or intra-partum variety. In addition, convulsions generally cease after delivery. In view of the uniform American plan, it is hard to understand why the German, French, and English schools rely on the medical treatment until the cervix is well dilated by the natural processes before they hasten delivery by forceps or version.

The great obstacle to rapid delivery is of course the undilated cervix, both before labor sets in, and even during the early part of the dilating stage. This condition is what has given rise to the divergence of opinion as to the best treatment to pursue. Statistics show that by following the expectant or "do-nothing" plan nearly all the children, and about one-third of the mothers, are lost.

As to what method shall be employed for hastening delivery we have a choice between the hydrostatic bag, instrumental and manual dilatation, and multiple incisions followed by forceps or version, craniotomy if the child be dead, and finally Cæsarean section. With reference to the latter Charpentier reports a mortality of 36.26 per cent., a very high rate; and, on account

of the many objections attending this method, chief of which are atony and hemorrhage of the uterus, I do not believe it will ever be the operation of election.

The most popular method to-day is the artificial dilatation of the cervix and the prompt extraction of the fetus; provided, always, that it is done in a scientific manner; meaning the continued and watchful respect for the cervical barrier, coupled with the scrupulous avoidance of everything suggestive of that horrible and brutal accouchement forcé recommended by the older obstetricians. Clinically, the effacement of the cervix may best be accomplished by (1) rapid method within one hour and a half, (2) slow method, when more time is at our command. For the rapid dilatation the case may demand multiple incisions or instrumental divulsion by some instrument of the Bossi type, or, better still, bimanual stretching of the cervical sphincter. Multiple incisions are best adapted for those cervixes that are very tense, especially in primiparæ and before the end of the thirtieth week of gestation, and in those explosive cases which demand the most urgent and rapid delivery; but unless the operator is very competent, it would be better not to operate at all. The Bossi instrument I consider a very dangerous one, except in the hands of an expert. To Dr. F. S. Newell, of Boston, we are indebted for a new dilator of the Bossi type, which is destined to supplant the latter because of its greater safety. Its chief advantage consists in the fact that the power must be applied by the hand, and the instrument is therefore under the absolute control of the operator.

The ideal method is the bimanual dilatation, because the force is directed from above downward in imitation of Nature's bag of waters, and because there is little or no danger of rupturing prematurely the membranes, and of displacing the original presentation and, finally, because with the hands traumatism of the uterus is reduced to a minimum.

If a slow method is indicated, the Voorhees' hydrostatic rubber bag of the Champetier de Ribes type, is heartily commended. The set consists of four sizes, easy of introduction and positive in results.

Whether the Voorhees' hydrostatic bag is used in the slower method, or the steel instruments in the rapid method, neither device should be relied on to effect complete dilatation, but only as a preliminary measure and a preparation for dilatation with both hands and artificial extraction of the fetus.

Samuel Crowell, M. D.:

No knowledge existed of myomata in the uterus of the patient whose confinement is to be described and upon whom *Cæsarean section* was performed. She was thirty years of age, and a primipara. A strong Christian Scientist, believing no physician necessary to aid her during, or at the end of, her gestation. One was engaged, however; a nurse also. It was agreed that a Christian Science reader should be present. Labor began on a Friday afternoon, and continued through Friday night, Saturday and Saturday night into early Sunday morning.

In the early part of the labor, it is said that the patient complained of no pains whatever, nor gave utterance to any sounds or expressions indicative of any.

The attending physician timed the uterine contractions by the Science reader, reading, stopping, reading again, at the beginning of the uterine pains.

As the hours dragged on, a limit to the patient's endurance became evident, and at last exhausted, wondering, no doubt, why Christian Science had not completed labor long before, the patient cried out that she could endure it no longer. The physician, who had been keeping careful watch over the patient, here stepped in and advised ether and forceps. The patient quickly consented, and wanted ether at once. Assistance was summoned, and ether started at about 3 A. M. Sunday.

The fetal head was high in the pelvis and the os was partially dilated. Repeated applications of the forceps failed, and only once were the handles locked.

Other assistance was summoned, and on further examination a dense band or ring was detected above the internal os, admitting most of the head but preventing its descent. Further application of the forceps was useless and *Cæsarean section* or craniotomy were the alternatives. Pending my arrival, no time was lost. A room was cleared, an operating table improvised, the patient's abdomen shaved and prepared, hot and cold sterile water secured; in fact, all possible preliminaries were attended to, and thus the patient was saved much delay.

She had been under ether seven hours, and the etherization, manipulations, and long tedious labors were beginning to tell on her vitality.

It was decided that *Cæsarean section* could be performed

quicker and with less shock to the patient, and at the same time save the life of the fetus.

Craniotomy, through an obstruction in the lower segment of the uterus, would be difficult, slow, liable to cause infection, and serious damage to the parturient canal, and sacrifice the child's life.

In less than four minutes after the first incision, the child and placenta were removed, and the sewing up of the uterus and the conclusion of the operation was in process.

The cause of this delayed labor was apparent, from the interior of the abdomen, after the delivery of the child and contraction of the uterus. On the posterior wall of the uterus, just above the internal ring, was a fibromyoma, the size of an orange, spreading out laterally. The surface was very edematous, and this edema spread around anteriorly, and was plainly seen just above the junction of the bladder and the uterus.

This condition of the fibroid is mentioned by most writers on the subject. It is a matter of common observation that fibroids grow during pregnancy, and grow more as a result of this edema than by actual hypertrophy. It goes down after pregnancy, and the fibroid may be smaller than ever, or it may disappear altogether. When a fibroid is known to exist and the tumor suddenly increases in size, pregnancy should be suspected.

The operation for Cæsarean section, until within the last few years, has only been performed on the rarest occasions. In private practice it has been but seldom done. In many of the lying-in hospitals throughout the country, it is becoming quite a common thing under modern hospital arrangements. Its mortality is very slight at the present day, and compares favorably with other abdominal operations. It is considered by abdominal surgeons as among the easiest of operations to perform, and is quickly done.

The greatest danger is that the patient may have become infected by repeated examinations before it is resorted to.

Cæsarean section is coming to be more frequently employed, especially in the interest of the child, as the dangers and risks to the mother have lessened—the absence of proper surgical technique being the greatest objection to it.

Familiarity in witnessing and in performing this operation is a determining factor in its adoption when occasion makes it possible.

A. P. Heineck, M. D.:

I have not the slightest hesitancy in advancing what I firmly believe to be the only safe and scientific method of treating *ectopic gestation*. I hold that this condition is a disease—a very dangerous disease—and that the products of ectopic gestation should be regarded as a neoplasm—malignant at that. The extra-uterine ovum should not be treated as a pregnancy, unless the mother be extremely desirous of having a child, but as a parasitic or malignant growth. Surgery, therefore, offers the only reliable method of treatment. The surgeon's skill and science should be invoked on a diagnosis or even on a probable diagnosis of an ectopic pregnancy.

The patient should be catheterized immediately before being brought to the operating table. This enables the operator to avoid incising a distended bladder and removes a confusing element from the field of operation. The incision should be made to one side of the median line. The side selected will be determined by the vaginal findings at the time of examination. A firmer cicatrix is thought to be more probable from a side incision. A side incision is better adapted to the method I employ in closing the abdominal wall. Avoid cutting the epigastric vessels and the urachus. The Trendelenburg position should be used. The patient should be placed gradually in this position, not suddenly, and should be restored as gradually to a horizontal position after the operation. A thorough examination of the opposite tube and ovary should be made for evidences of a former or coexistent pregnancy or disease.

No needless sacrifice of tissues or organs is called for. If the opposite tube and ovary are unaffected they should be unmolested.

Normal saline solution must not be given through any channel before the bleeding has been controlled or the bleeding vessels have been secured. When the bleeding points have been controlled its use is of the utmost value. Before control of the bleeding has been effected, the normal salt solution adds to the difficulty by increasing the blood pressure and the resulting liability to dislodgment of the internal thrombi and can be the cause of recurrence of the hemorrhage. If used before hemostasis has been secured, it will, in most cases, increase the blood flow. The operator should not close the abdomen until he is absolutely certain of his hemostasis. There must not be a sus-

picion or any misgiving as to this most important step in the operation.

Avoid denuding the peritoneal surfaces. Denuded surfaces offer avenues for the entrance of infection. Peritonization, or the covering of denuded surfaces with peritoneum, lessens the formation of adhesions. It also aids in checking the hemorrhage and forms a barrier to the advance of inflammatory processes.

I employ a peculiar method of suturing the different layers of the abdominal wall. We use an intradermic stitch (a subcuticular stitch), which is continuous and which does not penetrate the upper layers of the skin. The silkworm-gut stitches are tied over a piece of gauze, extending from their point of entrance to their point of exit, and covering the line of incision. The silkworm-gut sutures are figure-of-eight sutures introduced after the introduction of the peritoneal sutures. The upper loop of the silkworm-gut stitch includes both skin and subcutaneous tissues, the lower loop includes the sheath of the muscular fibers of the rectus. The peritoneal stitch includes peritoneum, peritoneal fat, and transversalis fascia. It is so introduced as to evert the edges of the peritoneum, and the loop of the stitch does not appear in the peritoneal cavity. The fascial stitch of catgut restores the continuity of the sheath of the rectus. Voluminous gauze dressing is used, but no dusting powder. Zinc oxide adhesive plaster, because of its aseptic qualities, adhesiveness, and non-irritating properties, is used to hold the dressings in place.

Perineal straps, passed around each thigh, prevent the abdominal binder and the dressings which cover the wound from slipping up.

The greatest difficulty that arises in operating for ectopic pregnancy will be found in those cases in which the entire ovum cannot be removed. In such cases, the principal difficulty lies in the removal of the placenta. The presence of dense adhesions of the cyst wall and the vascularity of the cyst wall itself are also difficulties which must not be ignored.

The complete removal of the fetal sac and of the placenta is unquestionably the ideal procedure if consistent with the safety of the mother. Theoretically, the complete ablation of the ovum is the only perfect and complete operation. It markedly shortens the patient's convalescence; eliminates the

possible danger of sepsis that is liable to occur during the slow and tedious elimination of the placenta; does away with all the subsequent dressings of the case, impairs to a less extent the integrity of the abdominal wall. In practice, it is not always feasible.

In the cases in which I feared to risk disturbing the placenta, the sac was incised, the fetus and the other intra-ovulatory contents were removed, the umbilical cord was ligated close to its placental implantation. A portion of the sac wall was resected and the edges of the remaining portion were sewed to the abdominal wound. This method shuts off the general peritoneal cavity—exteriorizes the sac as it were. A large extra-peritoneal pouch is the result and this is packed with strips of aseptic gauze. An effort is made to keep the sac aseptic until the placenta has wholly sloughed out of the wound. It takes from twenty to fifty days for the placenta to be eliminated in such cases.

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Titian Coffey, M. D.:

We are led to believe that *pelvic lacerations* depend to a large extent upon the age of the patient—that an elderly primipara will tear badly while younger ones will come through without a scratch. We therefore expect and allow severe tears to occur in our elderly primiparæ and are surprised when they occur in younger patients. Such teaching is wrong. The condition depends largely upon the muscular tonicity and general condition of the patient. Women of muscular development, though very young, are prone to bad lacerations from a non-giving of the pelvic floor, rather than overstretching of its structures, whereas a primipara of the same age, with poor muscular development, will have either a frail perineum, that gives way with a high sulcus rupture as soon as the head touches the pelvic floor, or will suffer from overstretching of the parts as an after-effect. On the other hand, elderly primiparæ, if delivered carefully and slowly, will frequently come through with scarcely a bruise of the mucous membrane, and no bad after-effects. We all have seen cases of this kind in which there has been almost no discoloration of the vagina, following the birth of a normal-sized baby.

As a prophylactic measure then of subinvolution, we must conduct the second stage of labor in a most skillful manner.

This means the slow and careful delivery of the head under anesthesia and between pains so as not to allow the patient to bear down forcibly at the crucial moment, as the head is about to be born, and thereby cause too great tension in the wrong direction on the already overstretched tissues. The head should be kept in the position of marked flexion so as to let out of the lower vaginal third, its smallest diameter. It is accomplished by judicious use of the anesthetic, by making pressure on the head so as to keep it well flexed as the perineum dilates, and working the structures of the anterior commissure well back on to the nape of the neck before the parietal bosses are worked out, at the same time keeping the occiput up against the pubic arch, and making the actual delivery with the assistance of the modified Ritgen movement. All this demands careful manipulation to avoid tears about and in the region of the clitoris, which are so often annoying on account of hemorrhage.

Should these maneuvers fail, as evidenced by a break in the mucous membranes with hemorrhage before the head is delivered, or if there be evidences of overstretching, in the judgment of the physician in charge, or if there be delayed delivery on account of the non-stretching of the tissue, the simple operation of episiotomy should be done. This will not only prevent serious laceration, but will decrease the danger of overstretching with subsequent relaxation. It requires at times a nicety of judgment on the part of the attendant as to when, or when not to do this procedure. It is to be done as follows: One blade of the scissors is laid in the vagina to one side of the posterior column rugarum; the other rests on the perineum with the point directed one-half inch from the arms; the angle of the cutting edges of blades should lie on the center of the fourchette.

I have found that I have had better results, following the operation of episiotomy with the application of a few well-placed subsequent stitches than when I have allowed the parts to become overstretched. Examinations made six or eight weeks after confinement in an apparently normal delivery have shown the perineum badly stretched, with considerable gaping of the parts, whereas the results following episiotomy have shown a practically normal involution of the tissues.

Translations.

Immediate Massage in the Treatment of Fractures.—Guarnieri (*Archiv. di Ortoped.*), as the result of a considerable experience (including one in his own person) of the treatment of fractures by immediate massage, writes enthusiastically of the benefits to be derived therefrom. Massage should in his opinion be started as soon after the fracture has occurred as possible, the sooner the better. In the first instance it should be of the lightest character, and should hardly give any pain at all. The limb should not be rigidly fixed in splints, but merely kept at rest by some very light splint. Moreover, he says, massage in this early stage suffices to diagnose the fracture, there being no necessity for passive movement, which is so painful. The improvement is most marked in the first fortnight. As the tenderness decreases the massage may be more vigorous, and passive movements of the joint started, followed by warm baths and the prudent use of electricity. In the massage of these cases it is advisable to use plenty of vaseline. The cases which give the best results are those fractures in or near the joints, the forearm, and shoulder. The author advises massage for an hour, or even two hours, if it can be borne; the shorter periods are, in his opinion, less advantageous.

Scopolamine in Childbirth.—C. J. Gauss (*Muench, med. Woch.*, January 22, 1907) has conducted 1000 cases of parturition with the assistance of scopolamine. It has been stated that scopolamine is one of the most deadly of all poisons, and that there is no justification for employing it, but inasmuch as the toxicity of a drug is merely a matter of dosage, there is no reason why a small dose should not be considered safe. The purity of the preparation is of importance, and the author has found the specimens which he has used to be chemically pure. He criticises some of the statements which have been made, and quotes from Bumke, who has also had a large experience with this form of medication. The dose given by Bumke is 0.001 milligram (about 1-6400 grain) or less, and very rarely more. The maximum daily dose, save in one case, was 3 milligrams. As far as the mothers are concerned, he says that among his 1000 cases he did not lose a single one from the scopolamine. In his last 500 cases he had one death, which was due to internal hemorrhage in a contracted pelvic case. He did not experience a single instance of cardiac disturbance of serious nature.

With regard to hemorrhage, he finds that after measuring the loss in 363 cases, in 92.8 per cent. the loss was within the margin of the so-called physiological (that is, up to 500 grams),

while in 6.3 per cent. it varied between 500 and 1000 grams, and only in 0.9 per cent. did it exceed this amount. The average for the 363 cases was only 277.7 grams, a loss which is well below the physiological amount. The placenta was born spontaneously in 51 per cent. by means of slight pressure, or Credé's method in 48.1 per cent., while it had to be removed manually in 0.4 per cent., and by Cæsarean section in 0.5 per cent. The effect on the morbidity of the mothers, taken as indicated by a rise of temperature of over 101° F., appears to be absent, this working out in one series at 1.7 per cent. Turning to the duration of labor, he finds that forceps had to be applied in 6.83 per cent. (or 7.32 per cent. if one counts 5 cases in which they were applied for clinical purposes). This is highly satisfactory in the author's opinion. He proceeds to show further that the children were not harmed by the medication; 70.5 per cent. of them were born lively, 18.1 per cent. were oligopnoeic, and 9.6 per cent. were asphyxiated when born. The results were better with the second 500 than with the first, and this he ascribes to the improvement in dosage. The mortality of the fetus was certainly not increased during the time in which he has used scopolamine as compared with the period preceding.

Intraligamentary Chorion-epithelioma.—Garkisch (Zeit. f. Geb. u. Gyn.) reports a remarkable instance where a malignant deciduoma developed in the broad ligament. The patient was thirty-seven years of age; she had only been twice pregnant, and the last pregnancy had occurred fourteen years before she came under observation. In January, 1906, she was laid up with pleurisy; early in March a tumor developed in the left iliac region and grew quickly. The period ceased in February, and was replaced by occasional hemorrhages. On May 1 she was examined; there was anemia, with emaciation. A tumor of the size of a child's head rose above the pelvic brim; it was tuberosous and rather firm. The uterus could be distinctly defined to its right. Von Franqué operated. The tumor lay under the peritoneum, and its removal with the uterus and left appendages proved difficult. The peritoneum of the bladder was united to the appendices epiploicæ and serous coat of the sigmoid flexure, and the big cavity thus cut off from the peritoneum was drained through the vagina. The patient did well for a short time, but died on the twenty-fourth day with pulmonary symptoms; metastatic chorion-epithelioma and an abscess were discovered in the right lung, there was suppuration of both sterno-clavicular joints, with plugging of several of the branches of the vena cava, and pulmonary embolism. The pelvic tumor is figured and described minutely; it was a solid chorion-epithelioma separate from the uterus. Decidual changes were very marked in the isthmus of the Fallopian tube,

yet absolutely wanting both in the ampulla and in the uterine part. On the other hand these changes were detected on the surface of the left ovary, and a well-marked uterine decidua had developed with abnormal hyperplasia of the uterine glands. Hence the pregnancy had, in all probability, developed in the isthmus, the decidua growing through the tubal walls into the folds of the meso-salpinx, or reaching it after rupture of the tube. "Ectopic" chorion-epithelioma following an overlooked uterine pregnancy seemed less probable.

Imperforate Hymen.—Guinard (*Journ. des Practiciens*) gives the history of a case of imperforate hymen. The patient, a girl aged fifteen, had been subject for some months to severe epistaxis. Her abdomen on examination was found to be swollen, and palpation revealed an enormous tumor, pear-shaped and rising above the umbilicus, soft and fluctuating. It was like a gravid uterus of seven months. The girl had never menstruated. She was seized two years ago with severe pain in the abdomen. She had frequently had the wish to make water, but for some weeks past had had some difficulty in micturition. Diagnosis in these cases often favors an ovarian dermoid cyst with a twisted pedicle or tuberculous peritonitis. But a speculum clears up the diagnosis at once. The vulva in this case was perfectly formed. On separating the labia majora a bluish curved surface came into view, convex forwards, just like the head during labor. At each sigh of the patient this surface grew and stretched. In the middle line was seen a frenum of a reddish color which united the lower pillar of the vagina to the urethra. The hymen was opened by scissors in a transverse direction, and about 1 1-2 liters of thick brown liquid, just like chocolate cream, was forced out violently. The liquid was contained in a very much distended vagina. The patients nearly always consult a medical man for vague abdominal pains, or for epistaxis, or frequent desire for, with difficulty of micturition. Another point to notice is that sometimes the opening of the hymen infects the distended vagina, and a purulent vaginitis is the result. A simple incision followed by injections usually effects a cure. A similar dilatation of the uterus is a very rare event.

The Technique of the Induction of Premature Labor.—Planchu (*Lyon Medical*). This paper contains a discussion of the relative advantages and disadvantages of the induction of labor by the bougie or by the dilating bag. The objections to bougies are the risk of accidental rupture of the membranes and of occasionally wounding the circular sinus of the placenta, but most of all the uncertainty of the result. Sometimes in primiparæ the repeated introduction of bougies may not bring on labor for from five to twelve days. The opportune moment

for induction may in this way be missed, and the repeated manipulation greatly adds to the risk of infection. Of the dilating bags usually employed, that of Champetier de Ribes is the one most commonly used. The large size usually employed has many objections; unless the bag of membranes is ruptured it unduly distends the lower uterine segment, it tends to displace the presenting part, and so on. The faults are got rid of by using a much smaller bag, which acts not so much as a dilator of the cervix as simply to excite labor. Such a bag as used by the author is, when fully distended, about the size of a small orange and contains about 180 c.c. The small size of the bag prevents displacement of the presenting part or tension in the lower segment; the bag can be easily introduced without rupturing the membrane, and quickly provokes labor pains—in about two hours on an average. In the early stages it acts as a dilator, and by the time it is expelled into the vagina the cervix is about the size of a five-franc piece and the bag of membranes can continue the dilatation. The details of technique recommended are as follows: The bag is disinfected by scrubbing with soap and warm water, and is then washed over with alcohol and immersed for a quarter of an hour in a 1 in 1000 sublimate solution. The cervix is seized with a vulsella and drawn down towards the vulva and the index finger inserted into the canal and the lower 2 or 3 cm. of the membranes separated; the space thus made is gently douched out with an antiseptic solution. The bag, rolled up cigar-wise, is then introduced with the fingers and not with forceps. Forceps will only rarely be required, as in the case of primiparæ with a very narrow cervical canal. The bag is then filled with 150 to 180 c.c. of boiled water.

Strangulated Hernia and Rectal Cancer.—Verdelet and Griewauk (*Gaz. Hebdomadaire des Sciences Médicales*) report two cases of rectal cancer in which the development of a strangulated hernia was the first sign which led to the recognition of the rectal trouble. The first patient was a man of 52, who since twenty-eight years of age had had a right inguinal hernia; this had been kept up by a bandage. Four days before being seen by the authors he had been seized with acute pain at the neck of the hernia, and he found that the hernia had pushed its way beneath the bandage; attempts to replace the hernia were unsuccessful. He remained at work for four days afterwards, but at the end of this time the continuance of the pain, the irreducibility of the hernia, the presence of nausea, enlargement of abdomen, and constipation compelled him to call in a doctor, who diagnosed strangulated hernia, attempted taxis, and ordered a purgative, without, however, any beneficial result. The patient at this time was ill, with pinched features, cold extremities, and rapid pulse. The abdomen was considerably

distended and very painful to the touch, especially at the level of the hernia. The hernia itself, however, was only slightly tense, soft, and scarcely painful.

Operation was carried out at once and the hernial sac opened up; there escaped at once a considerable quantity of sero-purulent liquid, which appeared to come from the abdominal cavity. The sac contained a large piece of the great omentum, which was excised. As there were signs of peritonitis a lateral laparotomy was performed by prolonging the original incision. Sero-purulent peritonitis was present, and the fluid was of a fecal odor, and free gas was present in the peritoneum. A perforation of the small intestine was found; this was closed by suture, and for precaution this loop was fixed to the abdominal wall, so as to obtain an artificial anus, if the sutures closing the perforation gave way. The operation wound was then closed. The next day an artificial anus had formed, but the general condition of the patient was better. One month later the patient had regained his health, but the artificial anus still persisted, in spite of several attempts to close it. Nine months later the patient found difficulty in getting his bowels to act, and at a second operation it was found that he was suffering from cancer of the upper part of the rectum, which was considered unsuitable for operative interference.

The second case was a man, sixty-nine years of age, who had had for as long as he could remember a small right femoral hernia, which had always been reducible, and for which he had never worn any truss or bandage. Six days before being seen by the authors his hernia became slightly painful, and he felt sick. On the day when the authors saw him vomiting began and absolute constipation had set in. On examination there was found a rather tense and painless right femoral hernia. At operation there was found a large prehernial lipoma, beneath which was a coil of small intestine, slightly congested. The usual operation for femoral hernia was performed, and progress of the patient's condition was good. The bowels, however, could only be made to act by the use of mild purgatives and rectal enemata. He left the hospital three weeks later, apparently cured. A week later he complained of obstinate constipation, and on examining the rectum there was found an epithelioma of its upper part, for which it was considered no operation was advisable. As to whether in these two patients the occurrence of cancer of the rectum and of strangulated hernia was a coincidence or whether they may be considered as cause and effect, the authors are unable to decide. The history of these two cases, however, emphasizes the importance of examining for neoplasm in cases of old people who have had for years a hernia which had given them no trouble until it had suddenly become strangulated.

Death During Expulsion of Fetus.—Remy (Rev. Méd. de l'Est) discusses the harmful effect which the efforts made by a woman when expelling the fetus may have upon the cardio-respiratory system when heart lesions or pulmonary phthisis are present. The uterine contractions are aided by the voluntary efforts of the woman. During these efforts the glottis is closed, and the thorax, which is filled with air, is fixed so as to give support to the abdominal muscles. The left heart is thus pressed upon by the distended lungs and is not able to receive and distribute the blood brought to it by the pulmonary veins. It follows that stasis is experienced in the vessels of the lungs, and the right heart, being unable to expel the blood coming to it from the *venæ cavæ*, becomes dilated, and the veins become engorged, as is evident from the swelling of the jugular veins. When a right heart already suffering from disease is distended in this manner it is liable to collapse and cause a fatal syncope. It is useless to advise a patient not to make expulsive efforts, for when she becomes aware of the pressure of the fetal head upon the pelvic floor she is unable to resist the impulse to bear down. The best course to adopt is to apply the forceps and deliver her promptly; in this manner the whole process is shortened and the efforts which might have a prejudicial effect are suppressed. It is not always easy to put this advice into practice, for the physician may not arrive in time or death may supervene before he has a chance of intervening, as the reported cases show.

A lady who had had serious dyspnea at her previous confinement came for advice during her next pregnancy; she had a feeling of oppression, epistaxis, and pallor, but no albuminuria, and her pulse was regular. She kept about till labor began, during the period of dilatation she remained in bed, and experienced no difficulty. As soon as dilatation was complete the midwife sent for the medical adviser, but with the first expulsive effort the patient had a feeling of suffocation and succumbed after a few attempts to inspire. The fetus was promptly delivered by forceps, but it was not possible to reanimate it. There was a lesion of the mitral valve, and a single effort had been enough to induce a fatal syncope.

Dr. Etienne reports a case of a lady who had had articular rheumatism followed by hemoptysis and several attacks of dyspnea, the last of which occurred during her pregnancy. He desired the nurse to call him as soon as parturition began, but he only arrived in time to find the patient collapsed and pulseless with the fetal head resting upon the perineum. He gave subcutaneous injections of camphor and ether and prepared to apply the forceps, hoping to relieve the respiratory difficulty. As soon as the patient resumed the recumbent position she fell into a syncope and died. Abandoning attempts to restore the mother, the child was delivered, but was found to be inanimate and could not be revived.

Dr. Wilhelm also reports a case of a woman, aged twenty-eight, who had acute phthisis in both apices, and who had suffered from hemoptysis during her pregnancy, especially during the last month. She was very cachectic, but he hoped at least to save the child, and gave instructions that he should be sent for as soon as labor began. However, he did not arrive in time; the mother died, and the midwife delivered a well-made child completely blanched and which it was not possible to save. The prognosis in such cases is serious for the infant as well as for the mother; the fetus suffers during the pregnancy from disturbed placental respiration, and from the excess of carbonic acid in the maternal blood. In such cases attention should be directed to saving the child.

Tuberculosis of the Inner Genitals in Early Childhood.—Hohlfeld (*Zentralbl. f. Gyn.*) publishes an account of the post-mortem examination of two children where this condition was found, though it was associated in both with tuberculosis elsewhere. The first subject was a girl aged three. Her father and infant brother had both died of tuberculous disease. She herself had been taken into hospital seven months before death on account of attacks of vomiting; tuberculous peritonitis and enteritis were correctly diagnosed. At the necropsy Hohlfeld detected advanced tuberculous disease of the cervical, bronchial, mediastinal, and mesenteric glands, and a few foci in the liver and in one lung. The intestines and peritoneum were much involved. The Fallopian tubes were thickened and bore prominent yellow swellings; miliary tubercle was detected not only in one ovary, but also in the muscularis and mucosa of the uterus. The second subject was a girl one year and seven months, an only child of a mother who died in the puerperium and of a father said to be delicate. She herself had undergone a successful operation for tuberculous disease of the bones of the fingers and metacarpus, dying, after recovery, from an attack of double pneumonia. At the necropsy miliary tuberculosis of the spleen, liver, and peritoneum were discovered, as well as a caseous bronchial gland, and a tuberculous ulcer in the colon eight inches below the ileo-cecal valve. The uterus, as in the first case, was distinctly involved in the general disease, the endometrium being in a state of caseation, breaking down into the uterine cavity. The right ovary was converted into a tuberculous mass of the size of a hazel-nut.

The Electrical Treatment of Pruritus.—Noire (*La Clin.*, May, 1907) states that few affections are so intractable as pruritus; whether generalized or localized, it is usually chronic or recurrent. One is frequently consulted after many other practitioners and after a variety of remedies have been tried. The worst cases are those of anal or vulvar pruritus; there is

an anal affection termed idiopathic pruritus because the cause is unknown and it is not associated with any local lesion. The itching is intense; it comes on in crises, generally worst at night; an examination reveals nothing except lesions caused by scratching and irritation. Pruritus of the vulva may or may not be found in association with local disorders; the irritation and friction lead to edema and pigmentation of the parts; sometimes pustules develop or inguinal intertrigo, especially in women who are stout. Some cases yield to treatment with baths, douches, local applications, and constitutional treatment, but others are only relieved by electrical treatment. The best results are obtained by the use of the X-rays, the following technique being adopted: A weak dose must be used, rather less than that which corresponds to the tint B. of Sabouraud-Noire's radiometer. Anything stronger will cause a disagreeable dermatitis. The patient should rest upon a couch with the legs separated and surfaces well exposed to radiation. The affected part should be about 20 cm. distant from the anticathode. The dose should be equal to a half-tint of the radiometer, and should be renewed in ten days. In favorable cases some relief is experienced three or four days after the first application; three séances are required or possibly four; in each case there is an interval of ten days. The anus should be subjected to the same exposure, but the testicles must be protected by sheets of lead. The results obtained with the X-rays for pruritus of the anus and of the vulva are excellent.

Cardiac Massage.—Gross and Sencert (Arch. Prov. de Chir.) publish three fresh cases of intense chloroformic syncope treated by massage of the heart. In the first of these the conditions of success, were quite hopeless, as infradiaphragmatic massage was found to be impossible, and, after incision of the diaphragm, prompt and free access to the heart was hindered by a collection of fibrino-purulent fluid in the pericardial sac, and by recent cardiac adhesions. In the second case animation was finally restored after prolonged syncope and unsuccessful application of ordinary methods by massage practiced through the intact diaphragm. The details of the third case, given in a footnote, indicate that infradiaphragmatic massage was rendered difficult by enlargement of the liver, and that the fatal result was due to cardiac lesions and to the presence of a retro-sternal tumor formed by a persistent and much-enlarged thymus. These three records extend the list of the published cases of cardiac massage to the number of thirty-four. In seventeen of these cases massage after opening the chest was successful in only one; the transdiaphragmatic method practiced in five cases invariably failed; and in seven out of twelve instances of infradiaphragmatic massage animation was definitely restored. The authors conclude that cardiac massage claims

consideration as a very valuable resource in cases of chloroformic syncope. Clinical facts, they point out, clearly demonstrate that, certainly in cases of chloroformic syncope, both the thoracic and the transdiaphragmatic method of massage ought to be proscribed. Infradiaphragmatic massage through a small median wound in the epigastric region is regarded as a simple, easy, and safe procedure, and one meriting a prominent place among important therapeutical methods.

The Cracked-Pot Sound in Abdominal Surgery.—Mangoldt (Zentralbl. für Chir.) states that the *bruit de pot fêlé*, though usually regarded as of service only in the physical examination of pulmonary disease, has also a distinct importance in the diagnosis of abdominal affections. This sound can be readily elicited by percussion of an excised portion of intestine fully distended by fluid and air, but is very rarely to be made out under similar conditions in the living subject, except in cases of enormous distention by fluid and gaseous contents due to intestinal occlusion. The author has heard the metallic sound in five cases of appendicitis in which, after intervals of from two to three weeks from the beginning of the attack, suppuration in the ileo-cecal region was indicated by fever. At first he assumed that the physical sign in question indicated an abscess cavity containing fluid and air which was situated in front of the cecum. On operating for the incision and emptying of such abscess, it was, however, invariably found not in front of but behind the large intestine. On the other hand, in cases in which the abscess cavity was in close contact with the anterior abdominal wall the author failed to hear the sound. The presence or absence of this sign may thus, it is suggested, be useful in establishing the differential diagnosis between an abscess behind and one in front of the cecum. The cracked-pot sound in cases of retrocecal suppuration is thus explained: The abscess compresses the cecum and ascending colon against the anterior abdominal wall, and these portions of large intestine being mechanically obstructed or paralyzed by inflammation, become distended by gas and fluid exudation, and so present very favorable conditions for the production of this sign. It is held that when, in the course of the second or third week of an attack of appendicitis, this sound can be readily made out on percussion over the outer margin of the right rectus muscle opposite to the antero-superior iliac spine, the surgeon may venture with fair probability of success to diagnose an abscess situated behind the cecum and the ascending colon. This sound the author has heard also in cases of intestinal occlusion due to obdurate hernia, to tumor, and to cicatricial stenosis, and will, he anticipates, be found on clinical diagnosis a reliable indication of the existence of intestinal obstruction and, moreover, of the seat of the same.

Surgery of Tuberculous Cervical Glands.—L. S. D'Este (Il Morgagni) discusses the different ways of treating tuberculous cervical glands, especially excision and the injection of iodine. Since many cases recover completely with no other than dietetic and hygienic treatment, it seems unreasonable to advise free excision for cases with infection of only a few small glands. The advocates of iodine as the best treatment for all cases advise that intractable cases shall be finally submitted to more radical operations. D'Este considers that both schools have exaggerated somewhat. He does not deny the existence of great benefit to be derived from the hypodermic or parenchymatous injection of iodine preparations, but he decides that when the glands are large or numerous or painful or matted together, and still more when they are caseous or suppurating, treatment should begin with excision of the affected glands, unless there is any formal contraindication of operation. Recognizing a special rather than specific action of iodine in increasing the general organic resistance to tuberculosis, he considers that the two forms of treatment should be used together in all suitable cases, and he records a number of cases chosen to test his opinion. He does not regard an apical catarrh as a reason for not operating, and quotes Blos's record of sixteen cases operated on while suffering from incipient phthisis, and afterwards found to have recovered completely. The contraindications which he does admit are miliary tuberculosis of the lung, multiple visceral and articular lesions, and an extremely bad general condition. In some cases operation was refused or complete extirpation was considered to be unsafe. An unsatisfactory scar is much more common after partial operations than after complete dissection of the infected glands. Relapse is due to incomplete removal of the diseased area, and is therefore to be attributed to the operator rather than to the operation.

D'Este divides his own cases into three groups: (1) Eleven cases of radical treatment in its widest sense, all the glands which could be reached by minute and patient dissection being removed. (2) Twelve cases in which similar radical treatment was re-enforced by distant intramuscular iodine injections as described below; seven of these patients were in the same condition as those in the first group and the remaining five were in a much worse state. (3) Seventeen cases for different reasons could only be treated by incision and scraping or shelling out the glands, in addition to iodine treatment. The first group of patients recovered with only one relapse, and that in a very severe case more than a year after the first operation. The second group recovered without any relapse during the two years that the patients have been under observation. In the third group there were four cases of relapse, or rather of a continuation of the original disease, which could not be entirely

removed by the defective method employed. The author attaches great importance to removing all the diseased skin, so that the scar is the line of union of two pieces of healthy skin. After the first incision he uses chiefly a pair of scissors with blunt ends. The different planes of tissue are finally sutured separately with fine catgut, so as to leave no empty spaces, and so that there may be no unnecessary tension of the skin. When in the course of operation the jugular vein is wounded he treats it by lateral suture or ligature, but he describes the operation of tying the vein as free from danger. The iodine preparation contains pure iodine, 1 part; iodide potassium, 10 parts; anesthetic guaiacol, 5 or 10 parts; glycerine, 100 parts. Of this 1 cg. was injected at first, and the amount subsequently increased to 7 cg. or less, from ten to thirty-nine injections being made altogether. In some cases injections were made for some days before operation; in others they were begun directly after operation. Some account is given of each case belonging to the first two groups. The cases of the third group are not reported in detail. The less satisfactory results in the third group show that the success obtained with the second group was not simply the result of the iodine treatment. D'Este considers that the method of injection of iodine into the gluteal or lumbar muscles is the best of all means of introducing iodine into the system, and may be safely employed at all ages.

Hydrostatic Dilator in Placenta Previa.—Mende (Therap. Monats.) has during the last five years employed a uterine hydrostatic dilator in cases of placenta previa; the dilator he has not, as in Dührssen's method, placed within the amniotic cavity, but has left the membranes unruptured. He claims that the introduction of the dilator is a comparatively easy matter, and that results as good as those he has himself obtained may be obtained by an unpracticed operator. After carefully carried out antiseptic preliminaries the left hand is introduced into the vagina and is not again withdrawn until the dilator has been introduced and dilated to such an extent as to prevent further hemorrhage. The anterior lip of the cervix is held and steadied by forceps, and an attempt is made to determine which is the best point for the introduction of the dilator; the dilator, however, tends to find for itself the path of least resistance, so that this examination is not of paramount importance. An assistant now holds the forceps while the operator introduces the empty dilator by means of forceps, and guided by the hand within the uterus, passes it up over the internal os. The forceps are then withdrawn, the dilator being kept in position by the fingers, and dilatation is carried out. If the patient is exhausted by loss of blood she is allowed to rest with the dilator in position, and it is found that there is no great tendency to

the speedy onset of labor; if, however, the patient is in good condition, extension is exercised on the dilator by means of a weight fastened to the end of the tube of the dilator, the weight being hung over the foot of the bed, and under this extension the onset of labor is prompt and sometimes almost instantaneous. The power thus given to the operator of bringing on labor at the time of his own choice is of the utmost value for cases exhausted by hemorrhage and needing time for recuperation. The bleeding is under absolute control as long as the dilator is within the uterus.

On this system the author has treated in all sixteen cases; of the mothers, none died at the time, but one died of atonic hemorrhage during the puerperium; of the children, ten were born alive and the remaining six were dead before the beginning of the treatment. The mortality among the babies of 37.5 per cent, is relatively low; Olshausen's mortality on Dührssen's method is the only one known by the author to be lower, and is 35 per cent., but the number of cases described by the author is so small that any accident might more than account for the difference. The author prefers his treatment to that of Dührssen, and believes that Dührssen's method has the following disadvantages: The pressure of the dilator within the amniotic cavity tends to prevent the receding of the placenta, and may lead to intrauterine hemorrhage which may be overlooked; there is comparatively greater danger of asphyxiation of the child owing to the pressure of the dilator; the introduction of the dilator is difficult, and, if in difficult cases a separation of the margin of the placenta is carried out, much hemorrhage results; as the waters flow away there is danger of prolapse of the cord; labor sets in immediately, when the woman is often not in a condition to support it. On the other hand, the method here recommended of intrauterine dilatation is preferable to the classical method of treatment by version. In the treatment of version, as in Dührssen's method, the time of onset of labor is not under the operator's control; and, moreover, where immediate extraction is needed after version, the operation is one of considerable difficulty; in version there is not the same power of immediate and complete arrest of hemorrhage.

Puerperal Eclampsia.—Engelmann (*Zentralbl. f. Gynäk.*) publishes a full report and analysis of an unusually severe case of puerperal convulsions. The patient was a primipara, twenty-two years of age. The fits came on shortly before labor at term. Nearly thirty occurred before and shortly after delivery. Five hundred c.cm of blood were removed by venesection and 1000 c.cm. of saline fluid transfused. The fits ceased for over four days, then followed a restless night succeeded by 155 attacks in twenty-eight hours, the pulse ranging during

that time between 180 and 200. Venesection after the thirty-second fit gave no result, but after the hundred and fifty-fifth when the patient seemed moribund, the attacks recurring almost every five minutes, 2000 c.cm. of blood were removed and 1500 c. cm of saline solution infused. No more convulsions occurred, but within a few hours after the last attack violent mental excitement set in, puerperal mania developing. This was further complicated by broncho-pneumonia. Yet at the end of twenty-two days after the first fit the patient was discharged convalescent from hospital.

Stricture of Female Urethra from Tubercle.—Hartmann (Ann. de Gyn. et d'Obstét.) observes that stricture of the urethra, save that form purely due to cicatrices, is very rare in women. Recent authorities distrust the alleged cases of a very stricture due to gonorrhea, the precise homologue of a very common type in the male. In such cases close inspection usually showed that chronic proliferating urethritis was present. the free vegetations diminishing the caliber of the urethra, a condition which might cause retention of urine, but was not pathologically stricture at all. Hartmann publishes a case, hitherto unique, where stenosis of the urethra was undoubtedly caused by tuberculous deposit. Ahrens, Bérard and Trillat, and Perge have recently written on tubercle in and around the urethra. Hartmann's case represented a condition not previously noted—namely, tuberculous hypertrophic stenosing disease of the urethra. This patient was a woman aged fifty-seven subject to dysuria and continual desire to make water, of six years' duration. It transpired that her father had died of phthisis and that her brother suffered from angular curvature, whilst a few years previously she herself had been laid up with cough and emaciation. At the beginning of the present illness a "polypus" was removed under cocaine anesthesia without benefit to the patient. The meatus was surrounded by an elevated fold shaped like the mouth of a trumpet. It led to a very tight stricture. The whole, including the strictured area, was dissected away, the mucosa of the urethra above the stricture being united by suture to the healthy tissues of the vestibule. Relief from the symptoms was complete. The microscopic appearances were characteristic.

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SYMPOSIUM: THE TOXEMIA OF PREGNANCY.*

OBSTETRIC ELIMINATION, BY GILBERT FITZ-PATRICK, M. D.,
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Pregnancy is an incident in the life of woman—an adventure—for who knows the path she may tread, whether strewn with pitfalls or roses; sunshine or rain; happiness or sorrow; a trip around the gestation world in nine months, the success of which no one may predict.

It is true that with the experience of those who have gone before we may hazard a happy termination, but that is not a scientific conclusion, nor one that is of the slightest aid to the inquiring, anxious mother-to-be who has just set sail.

She wants a pilot for herself and consort, one who has studied the highways and byways, the corals and reefs, and made soundings of the harbors to be entered. One who knows the landmarks and milestones by day and by night; one able to read the charts and "lay to" until the storm has passed. Outline a diet when necessary and instruct her to always keep a supply of fresh water aboard. For the entire success of the

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journey depends absolutely upon a well-balanced system of emunctories.

Metabolism is markedly increased at this time. The leucocytes are more numerous, they have more work to do. No woman is full grown until she has passed through the period of gestation. The rounding out and developing incident to a first pregnancy borders upon a fatty infiltration.

Think of the close relationship between a physiological fatty infiltration and its natural consequences a fatty degeneration. Just when and where does it become pathological?

The processes of anabolism and katabolism are constant and during such a sensitive activity as pregnancy are easily unbalanced; the pathology that follows is either constructive or destructive; there is localized either too much or not enough blood (Pratt)—congestion or decongestion (Robinson)—has taken place and the subjective and objective symptoms that arise, including laboratory findings, should indicate the treatment.

Some people are born with or acquire weak organs, resulting in abnormal physiology, which may or may not become organic. Functional derangements can be easily corrected, may yield to diet and hygiene or terminate with gestation, while the organic continue on to dissolution. It is our duty to determine such changes; recognize the abnormal physiology—the developing pathology; and institute such habits and treatment as will best conserve the woman's health—re-establish a normal equilibrium of metabolism.

It may not be possible to maintain a perfect system of emunctories by any line of treatment while pregnancy continues, therefore here is where a most excellent quality of judgment is needed. It must be determined positively whether the changes are functional or organic, and can be held in check, and, furthermore, will subside with the delivery and convalescence; or whether they are organic, and if so, the best methods for terminating and removing the causative factor.

According to Williams, "pregnancy exerts a deleterious influence upon all chronic organic maladies," yet later on he states that it is only for the benefit of the child after it has become viable that labor should be induced, as in rare cases of pulmonary tuberculosis in which the woman is so ill that

it does not seem probable that she will live until the end of pregnancy.

The first part of the statement being true—and I believe it is a fact well established and accepted by the profession that organic diseases are aggravated and made worse by gestation,—then are we not derelict in our duty to sanction pregnancy in such a woman who will later on be sacrificed, either directly or indirectly, that a child of questionable heritage may be born? It would seem that our first obligations should be to the living woman, for the child as such is, physically and socially, an unknown quantity.

Now I grant you that all cases do not present themselves for advice or even engage an accoucheur during pregnancy, yet few women are afflicted with an organic lesion but what some physician knows of it. We must be more than "body-patchers"; not only counsel but warn the woman, who is suffering with a vital malady, against pregnancy.

In the functional variety of those diseases arising as a result of pregnancy, our duty is more clearly defined. Here we can, through diet, hygiene, and medication, accomplish results most satisfactory both to the patient and physician.

A great majority of the ills accompanying gestation are toxic in origin, from retention in the body of certain poisonous substances which should be thrown off. These substances may be retained through the improper activity of any one of the eliminating systems; the improper activity being caused by the various influences to which a pregnant woman is liable, whether these influences are environment, habit, hygiene, food, atmospheric changes, or suggestions; or whether the etiological factors are found in the pelvis as inflammations, erosions, etc.; or whether they result from pressure exerted upon the pelvic, abdominal, and thoracic viscera, by the growing uterus, the result is an unbalanced system of emunctories—an auto-intoxication.

Elimination, then, is my theme.

Auto-Intoxication, my justification.

Obstetric Woman, my thesis.

"Stimulate the Emunctories," my Therapeutic Emergency.

Stimulate the Emunctories, that is the marrow of my evening's effort—that is the one thought that I would have you carry home to-night. Stimulate the emunctories, relieve con-

gested capillaries; and equalize the circulation, for we are well and become sick all through a perfect or imperfect circulation of a healthy or unhealthy blood stream.

RECENT VIEWS OF THE ETIOLOGY OF THE TOXEMIAS OF PREGNANCY, BY HENRY C. ALDRICH, M. D., MINNEAPOLIS, MINN.

In assigning to me for my share in this symposium the caption above noted, our worthy Secretary, to make use of the vernacular of the street, "certainly handed it to me for fair."

To begin with, the conditions now grouped under the above heading have in the past been considered to have nothing in common, and are now taught to be due to a faulty condition or state of metabolism and of the blood, the liver probably being the chief organ at fault, in fact, an auto-intoxication.

In the past, however, there were so many hypotheses concerning the etiology that Zweifel has very aptly designated it as "the disease of theories." Edgar, one of the later, if not the most authoritative of writers on the subject, tells us that there are three sets of etiological factors to be considered: viz., (1) Conditions predisposing to hepatic insufficiency, such as pregnancy itself, heredity, and a previous history of toxemia. (2) Accessory factors tending to cause the disease to assume special types, as nervous instability, the menstrual epoch, and mechanical factors. (3) A toxic state of the blood, due to toxic substances in the blood which tend to produce a vicious circle inasmuch as a toxic blood state, by throwing more work on the liver, causes an interference with proper functioning, which in turn brings about further accumulation of toxic material in the blood.

I. Pregnancy itself is the great cause of this overwork of the liver, as it, the liver, is largely concerned in the upbuilding of fetal tissues; the importance of the liver substance being indicated by the large proportionate size of this organ in the fetus and infant, and it is believed that the maternal liver is called upon to develop enzyme-like bodies to aid in the growth of the fetal tissues in the organogenesis so rapidly taking place; to this drain upon the liver there is added the influence of the suppression of the menses, which is supposed to cause congestion of the liver and possibly the retention of toxic substances in the circulation. As pregnancy advances the risk increases, and after the nausea decreases there may

come a voracious appetite with ingestion of quantities of highly-nitrogenous food, which tends to aggravate the toxemia. The crowding of the growing uterus upon the liver and intestines interferes with their work and helps to lock up the bowels, thus increasing the absorption of putrefactive substances. The woman cannot and does not exercise, and respiratory activity is lessened and the auto-intoxication is increased.

One attack seems to predispose to another and it seems probable that the toxemia may be latent and even cumulative, and Ewing tells us that in some cases of dysmenorrhea a toxic condition may develop, antedating conception, resulting from the partial suppression of the menses. In such a woman there would be a predisposition to toxemia necessarily.

II. Other accessory factors are nervous instability, which is inseparable from pregnancy, as indicated by the reflex irritation so notable in the paroxysms of vomiting and eclamptic seizures.

The time of the menses tends to cause an aggravation of the emesis, the mechanical factor of the pressure from the rapidly enlarging ovum and uterus and its consequent interference with circulation and respiration, causing the kidney of pregnancy and constipation, thus increasing the auto-toxic condition.

III. Again nitrogenous substances developed from katabolism or directly from the food, are suspected of causing or helping to cause the toxemia; the failure of the liver to change the lower nitrogenous products of katabolism into urea and uric acid is held to be responsible for the accumulation of these substances in the blood; and a toxic state existing, it is well known that a nitrogenous diet fans the development of convulsions. Again, nitrogenous products of putrefaction ordinarily rendered harmless by the liver, may become pathogenic in the pregnant woman.

Changes in the blood, in its alkalescence and concentration, may be noted. The same condition found in diabetic coma is found in the acute toxemia of pregnancy, due to the presence of acetone, diacetic acid, lactic acid, higher fat acids, etc., and probably represents the incomplete oxidation of the carbohydrates; with this there is an intensely acid condition of the urine noted.

Inasmuch as the liver of pregnancy is in a state of exhaustion and cannot do its usual work, the ingestion of substances which it ordinarily neutralizes will tend to aggravate the toxic state, and, too, bacterial toxins must be thought of as chance factors in the production or aggravation of the toxemia.

In the preparation of this paper I have quoted quite extensively from the writings of Edgar, for to me, at least, his statements seem more authoritative and contain the consensus of recent thought experimentation and investigation along this line. However, other writers hold diametrically opposite views: for instance, Wolf, who stated that "my view of the matter is that it is futile to attempt to explain the etiology of pernicious vomiting through the medium of acid intoxication," this being the conclusion of quite an extensive article.

In the May number of the North American Journal of Homeopathy, the leading article is by Blodgett, of Boston, and Starbuck, of Springfield, Mass., and upholds the views of Edgar *et al.*, and shows quite conclusively the nature of the trouble and will prove a valuable addition to the medical literature on this subject.

TOXEMIA OF PREGNANCY—PATHOLOGY, BY W. H. WALTERS,
M. D., BOSTON, MASS.

A paper dealing with the pathology of the toxemia of pregnancy faces a field into which it is at present impossible to enter scarcely beyond the gateway. So little is known concerning the various factors at work and so inadequate is our interpretation of the symptoms noted, that any attempt at explanation must of necessity be unsatisfactory.

The "kidney of pregnancy" has come to be a term given to certain renal changes often noted in the one about to become a mother. It is characterized by an engorgement similar to that of the other viscera, a moderate increase in size, and a varying degree of impairment of the functional ability. Seldom in the course is a distinct inflammatory condition present, the lesion being due rather to a venous congestion induced probably by pressure of the pregnant uterus and by increased abdominal tension. Normal pregnancy cannot alone give rise to any form of nephritis. Slight abnormalities can, on the other hand, be etiologic agents in the so-called "acute Bright's disease."

Leaving this comparatively mild lesion of normal pregnancy, let us hurriedly look at the pathologic changes occurring in that series of conditions variously known as toxemia, uremia, eclampsia, etc. In persons dying of such conditions, different and, from the macroscopic standpoint, apparently slight changes are apparent. Most frequently the kidneys are identical with those above noted in the "kidney of pregnancy." At times a distinct parenchymatous inflammation with marked fatty degeneration is found. Again, absolutely no abnormalities can be found in connection with these organs. Of course, we must not assume, because no organic lesions are present, that no functional changes have occurred. Among pathologic states in other organs may be mentioned pulmonary edema or hyperemia and occasionally a form of broncho-pneumonia with punctate hemorrhages. The liver is hyperemic, increased in size and at times shows advanced fatty degeneration. Cerebral edema and anemia have been reported, with flattening of the convolutions. It will be seen, therefore, that there are no characteristic changes sufficiently prominent to allow one to make a diagnosis of the condition from them alone. If the pathology of this form of toxemia is obscure the urinary indications are even more so, no one constituent invariably indicating the approach or presence of trouble. We must consider the symptom complex, in each case giving careful attention to each phase that appears. Let us first consider the changes often noted in the urine of the normal case. In quantity it is variable, depending largely upon the amount of liquid ingested, although with a slight tendency to polyuria. Urea usually becomes deficient, sometimes falling fully 50 per cent. without appreciable injury. Much variation is noted among writers concerning the prevalence of albuminuria, some finding it present in 25 per cent. of all cases, while others report less than 5 per cent. As no apparent distinction is made between serum albumin from the kidneys and nucleo-albumin from other parts of the urinary tract, accurate comparison is impossible. Suffice it to say that in a relatively large number of cases, albumin is present in the urine. Sugar, not infrequently found, is either lactose absorbed from the active mammary gland, or glucose from an over-active glycogenic function of the liver. This very seldom causes trouble. In the early days, retention of urea was the popularly accepted cause, hence the name uremia.

This is now known to be fallacious, although in many cases an unexplained diminution of urea will act as a danger signal to the watchful attendant. That retention of urea alone cannot be given as a cause of uremia, is proven by the comparative harmlessness of that substance when experimentally injected into animals. Neither can we find any relation between uremia and an increase of urea in the blood.

In fact, it seems probable that many of our older ideas concerning the importance and significance of urea need modification.

At the present time it seems impossible that any known normal urinary substance can be the cause of the toxemia of pregnancy, because neither the urine as whole nor its individual components are toxic, as they were formerly supposed to be. Many theories have been advanced to explain this condition, but no one has yet satisfactorily done so. It is quite generally accepted that it is of the nature of an auto-intoxication, as it so closely simulates the symptoms of other exogenous intoxications. On account of the fact that progressive and retrogressive changes are both going on at the same time in two distinct organisms, the mother and the child, each interdependent, also explains the difficulty of our subject. The toxins produced by both are alkaloidal in nature, and when not properly disposed of seriously affect the mother, particularly in connection with the nervous system. But whether it is due to some one single constituent or to some complex combination, remains for the future to decide.

In addition to the old idea that retention of urea is the exciting cause, may be mentioned that the one that explained the toxemia as due to accumulation of creatin and creatinin. It is true that these substances, when directly applied to the cerebral cortex of animals, will produce convulsions and spasms. Many other substances will act similarly. And then, according to Taylor, creatin and creatinin are not increased either in the blood or in the urine in this disease.

Similarly there is no constant retention of the salts in this form of toxemia, an idea that once had some acceptance. Retention of the urine as a whole cannot be a cause, as there may be almost or complete suppression for hours without the disease progressing. Of course it may accompany any of the above when the causative connection may seem strong, but none

of these occasional concomitants have been found to be invariable. In 1893, Stumpf advanced the theory that with abnormal decomposition, a non-nitrogenous substance acetone is produced, which acts as a renal irritant. This substance together with its closely allied neighbor, diacetic acid, has within the last five years received a considerable amount of investigation in regard both to its occurrence in pregnancy and elsewhere. The former is slightly toxic, the latter a trifle more so, and it seems impossible, therefore, that the serious and often fatal symptoms can be caused by these comparatively innocuous bodies alone. It is an interesting fact, however, that the acidosis thus present can be controlled and the symptoms relieved by the prompt administration of the alkali treatment, usually sodium bicarbonate.

Whether this merely neutralizes these two constituents and the oxybutyric acid that may accompany them, or whether it at the same time corrects some other faulty metabolism at present unknown, must be left for the future to discover.

The importance of acetonuria and of diaceturia either as toxic agents or as signs of the presence of toxic agents, must be emphasized, however. The determination of these in the light of our present knowledge is important, ranking in point of value with the commoner urinary tests for various solids, albumin, sugar, casts, etc., and after all is done and all the tests give no cause for worry, probably some unfavorable results will occasionally follow, showing that as yet the exact cause still eludes us and that we have still much to learn concerning the toxemia of pregnancy.

THE TOXEMIA OF PREGNANCY.—SYMPTOMATOLOGY AND DIAGNOSIS, BY DR. HUDSON D. BISHOP, CLEVELAND, OHIO.

In considering the subject of symptomatology and diagnosis, I do so with the understanding that the term toxemia refers to the disturbed metabolism of pregnancy which in some cases is attended with comparatively minor disturbances, such as nausea, slight vomiting, or indefinite symptoms of some abnormal condition, while in other cases it may result in more pronounced evidences of toxemia, such as pernicious vomiting, the pre-eclamptic state, eclampsia, and acute yellow atrophy of the liver.

The interrelationship in the etiology of the above disorders

and the various conditions which lead up to them, must be assumed if one is to have a proper conception of the symptomatology of toxemia. And recent researches have shown that this relationship does exist and that all of these conditions have, at least in many cases, the same origin with manifestations differing only in degree. It must also be recognized that there are gradations between the various well-known clinical types of toxemia and that the symptomatology varies in different patients and even in the same patients at different stages of gestation.

Except in very rare instances the clinical types of the disease are markedly different at different stages of gestation. During the early months there is a form of toxemia in which unusual and persistent vomiting is the chief symptom. The degree of the toxemia can be safely gauged by the character and persistence of the vomiting. This form of toxemia may be of the fulminating variety in which the vomiting rapidly becomes of the pernicious type. In cases resulting in death, black vomit is a frequent symptom. A more common variety includes that class of cases in which vomiting is not so persistent but yet is the most prominent symptom. With the symptoms of vomiting there are rapid pulse, headache, prostration, occasional jaundice, and nervous symptoms dependent upon the degree of the toxemia. If this form of the disease is not relieved by proper hygienic and medicinal treatment, it is more than likely to lead to a fatality through the reduction of the strength of the patient so that she is unable to withstand the operative treatment incident to the production of an abortion. There is also a chronic type of toxemia occurring in the early months in which the nausea and vomiting are more or less severe, more persistent than ordinarily is the case and in which various nervous disturbances such as pruritus, neuralgia, salivation, etc., are present in the symptom complex. These cases are not usually looked upon as menacing to the individual at the time of their occurrence, but if they are not relieved by proper treatment they almost invariably lead to the pre-eclamptic condition.

The evidences of disturbed metabolism as shown by the urine in all these cases are low urea, high amido-acid, or undetermined nitrogen, usually high ammonia nitrogen, frequent indicanuria, and variable albuminuria.

From the third or fourth month to term, instead of vomiting being the chief symptom of toxemia, it is only occasionally so in the rare instances where the disease assumes the form of acute yellow atrophy of the liver.

The most common symptoms of toxemia after the third month are those characterized at the pre-eclamptic state in which there are more or less intermittent vomiting, headache, disturbances of vision, increased arterial tension, edema, and usually albuminuria. Jaundice is frequently a symptom together with other signs of hepatic involvement, and in many cases there is a marked evidence of auto-intoxication originating in the intestinal tract. In these cases, the history of the early months of pregnancy, usually, though not always, shows that there was unusual nausea and vomiting, and frequently this condition is noted in the history of former pregnancies. If untreated, this condition will almost invariably terminate in eclampsia.

The urinary evidences of disturbed metabolism in the pre-eclamptic state are low urea nitrogen, persistent tendency to high undetermined nitrogen, variable ammonia nitrogen—sometimes low, sometimes high,—and a variable albuminuria.

When eclampsia develops, the urinary symptoms are in no wise different from the pre-eclamptic condition, except that in the former albuminuria is variable, though frequent, while in eclampsia it is constant, standing out prominently as one of the essential features of the disease. Another evidence of a marked visceral involvement as a result of the toxemia in eclampsia, is the fact that, in the majority of the cases, jaundice develops at some time during the course of the disease.

The pathologic significance of the symptoms of jaundice occurring during gestation has not been fully determined, but clinical studies seem to indicate that it is an important symptom in determining the severity of the toxemia. It occurs often in non-fatal cases in all stages of gestational toxemia, but is more often seen in the severe cases of pernicious vomiting which cannot be distinguished clinically from acute yellow atrophy of the liver.

In conclusion, I would lay stress upon the following points: (1) That according to present knowledge on the subject, all gestational morbidities should be looked upon, until other cause is found, as evidences of toxemia. (2) That persistent vomit-

ing is, with few exceptions, a sign of toxemia, and that when black vomit is present, a fatal prognosis can be safely made. (3) That jaundice, especially when it is accompanied by pernicious vomiting, is a serious symptom, indicating marked hepatic involvement. (4) That in all cases of toxemia, more attention be given to routine examinations for the determination of all the nitrogenous bodies of the urine.

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TREATMENT OF THE TOXEMIA OF PREGNANCY, BY DR. J. F.
BECKER, IOWA CITY, IOWA.

The main principles in the treatment of the toxemia are the reduction of the amount of toxin developed, the stimulation of its elimination, and the correction of any pathological conditions associated with or resulting from its presence in the system. The disturbance of nitrogenous metabolism present in toxemia makes the diathetic management of this condition of great importance. Our first aim should be to diminish the amount of nitrogenous food allowed to the minimum, to prevent so far as possible the development of the toxin. With this end in view the red meats should be entirely excluded from the dietary. In the milder cases, a fairly liberal diet consisting of white meats or fish or oysters once a day, in conjunction with a cereal, vegetable, fruit, liquid, and milk diet will usually give the desired results. If improvement does not take place the diet should be farther restricted to rice, tapioca, arrow-root, asparagus, and vegetables of that class to supplement a liquid diet of beef, chicken, oyster or clam broth, liquid peptonoids, milk and buttermilk; in the more serious cases, however, where toxemia becomes marked, even this class of vegetables and liquid diet should be prohibited and the patient placed upon a strictly milk and buttermilk diet. In order to avoid tiring the patient with plain milk, peptonized milk, koumiss, and matzoon may be given in place of plain milk. If improvement follows, after a reasonable time a gradual return to the liquid, vegetable, fruit, fish, and white meat diet may be allowed; any aggravation in the condition, however, being an indication for a return to the strict milk and buttermilk diet.

The elimination of the toxin from the system must be accomplished chiefly through the kidneys, liver, and skin, and

their excretory functions should be corrected and stimulated as much as possible without causing undue irritation, as the use of strong diuretics, drastic cathartics, and powerful diaphoretics sometimes results in serious secondary conditions; one of the best means of stimulating elimination is by the free use of some of the well-known aperient and diuretic mineral waters which stimulate elimination in a marked degree without irritating the excretory organs. In more urgent cases in which this mild form of excretory stimulation fails to accomplish the desired results, or would require too much time, the bowels should be emptied by the use of full doses of a saline cathartic, or castor oil, or calomel followed by either of the others. The action of the cathartic may be hastened or supplemented by irrigation of the colon with large quantities of hot normal salt solution or solutions of sulphate of magnesia.

The free use of the mineral water in connection with a liquid and milk diet, will usually result in sufficiently free action of the kidneys. If for any reason the patient cannot tolerate or the stomach retain the necessary amount of liquids, it will become imperative to supply the system with water, and this can best be done by the use of enemas of warm normal salt solution; if the solution is thrown into the rectum slowly the patient will be able to retain from one to two pints, three or four times daily; where this fails, in desperate cases, the solution should be given subcutaneously as described farther on. The giving of diuretics, aside from the indicated remedy, is seldom called for; should it however be considered necessary to resort to their use, the acetate of potash will be found one of the most serviceable. In this connection it should not be forgotten that all diuretics whose action is due to an irritation of the renal epithelium are strictly contra-indicated.

To promote elimination through the skin the patient should be given a hot bath, followed by a brisk rub with a crash or bath towel, each evening before retiring. This not only increases the action of the skin, but often aids the patient in securing a good night's sleep, which is so essential and often difficult to obtain. In urgent cases the action of the skin may be farther increased by the use of hot packs or hot-air baths. These, however, should be given with care as they occasionally produce a marked depression of the heart's action. The use of pilocarpine as a diaphoretic is being abandoned on

account of its tendency to produce edema of the lungs. If we fail to get relief by other means and in all desperate cases, we may further promote elimination and at the same time dilute the poison in the blood by the use of normal salt solution or Ringer solution, by subcutaneous or venous infusion. In cases in which there is a strong, full bounding pulse with great arterial excitement or marked tendency to edema, the blood-pressure should first be relieved by venesection, from ten to sixteen ounces, or more if necessary, of blood being removed, this being followed by the infusion, the amount of the solution used usually being less than the amount of blood withdrawn. In cases in which the heart's action is weak, and especially in anemic patients, the infusion may be used without being preceded by venesection. In either method, however, care must be taken not to flood the system with fluid and develop or aggravate a pre-existing edema of the lungs, as any undue nervous strain may tend to precipitate an eclamptic seizure. The patient should be freed from all physical strain and emotional excitement, her surroundings should be pleasant and conform as nearly as possible to the approved rules of hygiene. Her room should be large, well-lighted and ventilated, and located so as to avoid the noise and confusion of the household as much as possible. In mild cases she may be allowed moderate exercise in the open air and any light vocation which will occupy her mind without producing physical fatigue. Her clothing should be loose, so as to give perfect freedom of motion and avoid any interference with the circulation or undue pressure upon the abdomen and its contents, whereby their functional activity might be interfered with. In severer cases the patient should be confined to her bed in charge of a competent nurse, and given absolute physical and mental rest; all visitors should be excluded and the room be made as attractive and quiet as possible. The nurse should endeavor to divert the patient's mind from her condition as much as possible and maintain a cheerful mental attitude. Should the patient be troubled with insomnia, it may become advisable to resort to the use of hypnotics to induce sleep, for this purpose moderate doses of chloral or bromides with chloral, preferably given per rectum, usually give very pleasing results, and do not interfere with elimination as does opium and its alkaloids. The pathological conditions associated with

or resulting from the presence of the toxin in the system should be treated with the carefully-selected indicated remedy. In renal insufficiency and inflammation such remedies as apis mel., ars., merc. corr. or sol., picric acid, phos., and terebinth. will be found most frequently indicated, and their administration in connection with proper adjuvant treatment will give prompt relief in the large majority of cases. For the irritating effect of the toxin upon the nerve centers and the tendency to eclampsia, bellad., gelsem., glonoin, and ver. vir. will be found most often indicated. The special indications for the administration of each of these remedies are well known, and their repetition here would only be a waste of time. There is one point, however, that I wish to bring out in regard to the administration of our remedies, and that is, the necessity of giving them in such a manner as to insure their assimilation or entrance into the circulation. In many of the most desperate cases of toxemia the assimilative functions of the system are interfered with and medicine given per stomach may fail to be absorbed and get into the circulation. In order to avoid failure in treatment from this cause, in all questionable cases, our remedies should be given, in proper solution hypodermatically and repeated as often as indicated. If this line of treatment is judiciously carried out, a large per cent. of cases will improve and pass through their confinement without serious trouble, while others, in spite of all treatment, will fail to improve or grow worse. Under these conditions there is only one resort, which is, the emptying of the uterus, and this should be done before secondary conditions have developed which imperil the patient's life. Statistics show that seventy per cent. (70%) of all cases even when eclampsia has developed, begin to improve as soon as the uterus is emptied, while in a large per cent. of the fatal cases death is due to incurable secondary conditions which develop before the uterus is emptied. In case the toxemia culminates in eclampsia, either after proper treatment or in neglected untreated cases, the first indication will be—empty the uterus, as rapidly as consistent with safety, under complete chloroform anesthesia; and follow this by the indicated remedy and the eliminative treatment herein suggested.

TOXEMIA OF PREGNANCY (PROPHYLAXIS), BY DR. C. B. KINYON, ANN ARBOR, MICH.

The part assigned me in this symposium is so restricted in its scope and I am so limited in time that I can do little more than touch upon a few of the salient points. It is now pretty well settled that the so-called toxemia of pregnancy is due to the action of the toxin or toxins in the blood upon the nerve centers. I shall confine myself largely to a consideration of three of the chief manifestations (or centers of activity, in other words) of the toxemia of pregnancy: *viz.*, acute yellow atrophy of the liver, pernicious vomiting of pregnancy, and eclampsia. The weight of authority at the present time is certainly in favor of the opinion that this toxemia is either generated in the child or, at least, is due to metabolic changes occurring during pregnancy. Whether the toxin acts upon the liver or the kidneys or both it is not my province to discuss. In passing I will simply give it as my opinion that it produces its deleterious effects upon both these organs and that their condition previous to pregnancy is an important factor in the resulting effects of these poisons. Starting out with the assumption that the attending physician has carefully examined his patient and found conditions present manifesting symptoms of toxemia, we will say a few words upon the treatment best to follow in order to ward off the toxic effect of this poison.

Before beginning the discussion of the treatment, a few words as to the best method of an early diagnosis of the presence of toxemia. For many years the medical profession as a whole has been prone to consider the kidneys largely at fault in these cases. But it is now known beyond a reasonable doubt that the liver is more responsible than the kidneys. In fact, it is now known that the exact nature of the disturbance of nitrogenous metabolism which is responsible for the clinical manifestations of the toxemia pregnancy is a failure of the oxidizing capacity on the part of the liver. For this reason the proteid derivatives, principally amido-acids and ammonia, which are normally combined by the liver into urea, are no longer combined, but circulate freely in the blood in a poisonous form and are to some extent excreted by the kidneys. Besides ammonia and amido-acids other proteid derivatives, such as those containing sulphur, fail to be oxidized, and these con-

tribute to the toxemia. The exact identity of these poisons has not been determined. They are probably various and apparently not fully accessible to present chemical and biological methods, but there is absolutely no doubt about their existence in the blood and their action on the viscera. The most recent and accurate work along this line is by Neuberg and Richter. They have demonstrated large quantities of leucin, tyrosin, and lysin in the blood of acute yellow atrophy. The complex nature of the sources of these poisons accounts for the fact that the clinical manifestations of the toxemia of pregnancy vary from mild vomiting to acute yellow atrophy. These poisons in the blood will account for the following morbid products in the urine rather than urea: uric acid, ammonia, leucin, and tyrosin, and other unoxidized proteid radicles and unoxidized sulphur compounds. These should be tested for. In considering the treatment best to follow in the prophylaxis, there are four chief channels of elimination—the skin, the liver, the kidneys, and the intestinal canal. A few words regarding the diet, exercise, rest, and food will be considered. The channel along which our treatment can be the most successfully applied will depend upon the conditions obtaining in a given case. This will be largely determined by a careful and complete analysis of the urine and a careful and complete examination of the blood. The question of emptying the uterus is not to be considered until all other means have failed and convulsions have occurred, therefore this part of the subject will fall to one of my associates. When a physician has ascertained that the toxemia is present his first thought is to eliminate the poison. In nearly every case this is best done by the following method:—Give merc. dul. and soda tablets as follows: Merc. dul. 1-10 of a grain and soda one grain, in each tablet. Give two tablets at the first dose. Repeat this dose, one tablet every half hour until ten tablets are taken. Two hours after the last tablet is given give a good-sized dose of Rochelle salts. My favorite method of giving this is as follows: Take one ounce of a saturated solution of the salts. Give a teaspoonful of this solution every half hour until the bowels move. As a rule six doses will cause a free evacuation. In cases where convulsions are impending, croton tig. may be given to hasten the movement of the bowels. Force the patient to drink large quantities of good pure water. If the kidneys

are seriously involved and disabled, produce a profuse sweating by the method most effective and rapid in action. The method will depend upon the surroundings of the patient and the help obtainable. If convulsions are threatening there is nothing equal to chloral hydrate given freely. I sometimes give this as high as 30 grains in warm milk as an enema. This dose repeated every half hour until the nervous symptoms are quieted or until two drams are given, if necessary. At this stage, if convulsions do supervene, a few whiffs of chloroform will control them absolutely. Chloral and chloroform work very nicely together. They do not weaken the heart, and chloral is not only a sedative but a vigorous diuretic. Of course merc. cor. 3x, arsenicum 3x, apis 3x, and veratrum viride tincture and gels. tincture, are the mainstays from a therapeutic standpoint. In all these cases I have come to rely very implicitly upon berberis vulg., 1x trit. A dose every two hours in cases where the liver is seriously involved. Of course phos. 6x is always to be in mind. The question of diet is very essential indeed. Milk in its various forms is the other chief reliance in all cases. No meat or eggs are allowable in serious cases. Small amounts of vegetables and cereals. All excess of inorganic salts must be avoided. As a matter of fact, all elements of food can be diminished in nearly every case, with decided benefit. The needs of the body, carefully estimated, will enable a physician to give only enough to keep up nutrition and thereby avoid taxing the system with more work than necessary in getting rid of the waste tissues and the products of disease. Of course these patients must always have plenty of water. At the present time saline infusions are considered the orthodox treatment, but of late there has been some objection to the too free use of the saline. But this subject of the use of saline infusion is now being worked out very carefully in this country as well as in Germany and France. If used it should be given as an enema and by hypodermoclysis.

While the patient is very restless you will find aconite, gel-semium, and rhus. tox. are of great value.

In all cases of toxemia of pregnancy rest and bodily activity have an important bearing upon the outcome of the case. Rest and quiet avoid the dangers arising from exposure or from the sudden checking of the skin elimination. This precaution also avoids the undue production of waste material that must be

either eliminated or absorbed; in the one case calling for an extra amount of work and in the other case but adding to the dangers of the already overtaxed system. But the chief value of rest is that it maintains an equal circulation, thereby lessening the danger of dislodging the morphological products of the placenta. According to some of the latest theories the toxemia is materially aggravated by the products of fetal metabolism carried into the mother's circulation, thereby causing changes of a pathological nature that may lead to functional and ultimately organic disease in the liver and kidneys of the mother. This theory is gaining ground very rapidly of late. This question of rest is of prime importance in the treatment of all infectious diseases, and why not of equal importance in the treatment of toxemia of pregnancy? Of course fresh air and well-regulated exercise are of great utility.

I have purposely avoided encroaching upon the ground of diagnosis or treatment of this condition, and in so doing I realize full well that I have been very fragmentary indeed in the treatment of this subject. But of one thing I am sure, namely, I have been very brief.

THE TOXEMIA OF PREGNANCY.—THE EFFECT UPON THE CHILD, BY JOSEPH PETTEE COBB, SENIOR PROFESSOR OF PEDIATRICS, IN HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF CHICAGO.

There is no question but that many diseases attack the fetus in utero: some cause death, others influence growth and development, and others run their course during intra-uterine existence. A mortality of 20 per cent. is not a high estimate of the death rate of intra-uterine existence.

The extremely high mortality rate of infancy traces part of its causal factors to intra-uterine conditions. Besides the hemic genesis of intra-uterine life, the ingestion of infected amniotic fluid, and the inspiration of infected discharges during birth, may be responsible for infantile disease.

Again many experiments have been made to prove that disease germs are transmitted by means of the maternal milk. Staphylococci have been demonstrated in the milk of septic puerperal women.

The infant during intra-uterine life and for some time after birth has not the same power of elimination as the adult.

The kidneys are fairly active, but the sudoriparous glands are inactive, and the elimination by respiration, absent, of course, before birth, is only gradually acquired during infancy.

The topic for our discussion does not include the question of heredity, the inheritance of disease tendencies, the potentialities which shall eventually determine pathologic conditions in the fetus or in the developing child, but rather the effect on the fetus or child of the toxemias of the mother during pregnancy.

It is evident that toxemia may antedate conception; that it may develop during the early part of gestation to continue throughout pregnancy or to disappear in a longer or shorter fraction of that period; or that it may develop only in the latter part of pregnancy.

Some forms of toxemia result in an early and abrupt termination of labor, while others seem to have little or no effect on the ability of the uterus to complete its cycle of pregnancy.

Not only the character of the toxemia but also the eliminating capacity of the mother will have a bearing on the effect upon the child.

Syphilis, malaria, variola, measles, scarlatina, erysipelas, tuberculosis, typhoid fever, and septicemia have all been transmitted by the mother to her offspring in utero.

In no one of these diseases, not even in syphilis, does infection of the fetus invariably occur. In many of them the direct transmission of the disease is extremely rare, while in one at least (syphilis) it usually occurs. In some, especially in those where the toxemia is profound, like syphilis, typhoid fever, and variola, premature expulsion of the dead fetus is common.

The effects of the infection upon children born alive at or near term by infected mothers have been most carefully studied in connection with syphilis and tuberculosis, and are familiar to you all. We commonly refer to these and other fetal conditions as hereditary without any very careful consideration of what we mean by the term.

Conception means the union of the nuclein of a spermatozoon with a similar substance in the ovule: these two definite quantities of nuclein are endowed with the potential vital characteristics of the two individuals by whom they are originated; the potentiality for disease will stamp itself upon the new being

with the same force that physical, mental, and moral potentiality is transmitted. This, however, does not mean the inheritance of disease itself but rather the inheritance of a potentiality or predisposition to disease which invites a subsequent infection or is very amenable to the influences of environment or malnutrition.

The possibilities for infection or of malnutrition during intra-uterine life are patent: intra-uterine infection or malnutrition is synonymous with "toxemia of pregnancy." A poor heredity is as helpful to intra-uterine infection or malnutrition as it is to the same influences in extra-uterine life.

The effects upon the offspring of inebriety and drug habits have been studied at some length: as would be indicated by the foregoing physiological facts it is inebriety of the mother, and especially during gestation, that entails the most disastrous results. The offspring of inebriate mothers have a death-rate nearly two and one-half times as large as that of other children. Paternal abstinence or temperance seems to have no effect in the presence of maternal intemperance. The records of hospitals for the insane, the histories of epileptics, of degenerates, and of criminals, show the baneful heritage of inebriety.

Intoxication whether partial or complete, periodic or continuous, is a mixed toxemia. Not alone is the toxemia that of alcohol, itself baneful, but also the impaired katabolic and anabolic changes generate a group of toxins which, if not eliminated freely, produce pathologic conditions. It is a well-known fact that while the effect of alcohol may be at first to stimulate the emunctories, its continued and its excessive use embarrasses their work: the products of imperfect katabolic action are stored up in the body and undoubtedly have their toxic effect upon the fetus; environment and nutrition are important factors in life: the fetus is dependent for both of these factors upon its mother. The child of the inebriate mother starts life handicapped by the effects of mixed toxemia. Its high morbidity and mortality are not surprising.

Our title does not permit of a discussion of the paternal inheritance or potentiality.

The maternal kidney is recognized as the one organ most likely to be impaired functionally or pathologically by pregnancy. The effect of this impairment upon the health and expectancy of the mother has been studied much more care-

fully than has the effect upon the child. Uremic convulsions, eclampsia, albuminuric retinitis, and albuminuria are recognized as conditions of pregnancy occurring in a certain proportion of pregnant women with impaired kidney capacity. When this kidney impairment is a chronic interstitial nephritis, itself depending upon a general arterio-sclerosis, the expulsion of a dead fetus almost invariably occurs.

Meyer, of Copenhagen, states that his studies show that "albuminuria is present in 5.4 per cent. of pregnant women. Casts accompany the albumin in 2 per cent. Premature births occur in 8 per cent. of patients with albumin and in 21.5 per cent. of patients who had casts in the urine."

Fehling gives nephritis as one of the causes of repeated stillbirths.

Charpentier and Butte claim that an excess of urea in the maternal blood may prove fatal to the fetus.

No one, however, so far as I can learn, is willing to claim that excess of urea in the blood in itself is always the cause of fetal death and premature delivery. On the contrary, many experiments have been made which go to show that an excess of urea in the blood is not necessarily the cause of pathologic conditions in either the mother or the child.

That an excess of urea in the blood is usually accompanied by some other toxic body, is the chemist's claim: these other toxins, at present not definitely known, are held to be responsible for the mother's condition. However this may be, we know that the fetus often dies in utero, is prematurely expelled either living or dead, or dies soon after birth with all the signs of toxic poisoning when any serious impairment of the maternal kidney obtains.

Diabetes rarely occurs in pregnancy, but when it does, almost invariably causes death of the fetus and usually in the early part of gestation. A toxemia of the blood apart from the presence of sugar is a condition of diabetes: whether death of the fetus is caused by this toxemia, or by the dropsy of the amnion, or by the saccharine amniotic fluid, is a matter of conjecture.

I am aware that I have not fully answered the question which forms the topic assigned to me.

In the present state of our information we can safely state that maternal toxemia sometimes causes death of the fetus,

sometimes the premature expulsion of the living fetus, sometimes transmits the same disease to the fetus, sometimes impairs the mental growth, development, and stability of the offspring, causing a marked tendency to disease and to individual degeneracy.

I have appended a few cases which come under some of the different types I have discussed.

Case I.—About one year ago I assisted Dr. Bruce in inducing labor and delivering Mrs. B. under the following conditions. The doctor had had the care of Mrs. B. for over two months and had made four examinations of the urine: the last one of which was three weeks before the completion of gestation. Dr. Bruce, who is an expert medical chemist, found nothing abnormal in either sample.

Less than forty-eight hours after the last specimen of urine was evacuated Mrs. B. suffered a severe eclamptic seizure. This was early in the evening on Saturday; the seizures were repeated several times, the severest occurring at 1.30 a. m.; soon after this forced dilatation was completed; instrumental delivery was completed at 3 a. m. Sunday, and a healthy, well-nourished, fair-sized baby was born. Mrs. B. had no return of the seizures after her delivery; she made a good recovery with no unfavorable symptoms; an extensive perineal wound healed very kindly.

During the first twenty-four hours after her delivery she passed 120 ounces of urine, and for several days the amount of urine passed was excessive. No analysis, however, was made at this time.

The baby did very well, taking hot water with a small percentage of cream for nourishment. On Wednesday morning, three days after the termination of the labor, the baby was put to the breast and nursed well. In less than one hour the baby had a convulsion which lasted practically continuously until evening. There was no return of the seizure, but the child died on Friday morning.

In our opinion this baby was poisoned by a toxin which did not appear in the urine forty-eight hours before the first maternal convulsion and which was eliminated by the milk three days after labor was completed, though there had been exceptionally profuse urination.

Case II.—Mrs. S., æt. thirty, was under my care from

the beginning of her first pregnancy. Her general health was not good. She had a slight mitral insufficiency due to an attack of inflammatory rheumatism in girlhood: she suffered with chronic catarrhal secretions both nasal, vaginal, and cystic; the bowels were habitually constipated; the skin was inactive, dry, and harsh, with a marked tendency to eczema; the urinary elimination was poor and scanty. The amount of urine varied between 20 and 30 ounces; the total amount of urea from 7 to 13 grms. per diem. Water was distasteful to her; her greatest punishment during her gestation was her effort to drink daily two quarts of water, the minimum I advised. Repeated examinations failed to show any abnormal constituents in the urine in appreciable amounts. At the completion of eight months she had a severe attack of influenza. Within a week she had an attack of acute nephritis; while we were debating on the advisability of inducing labor, the process began naturally and was terminated in about twenty-four hours.

Twin boys, weighing four and a half and five and a half pounds respectively, were born alive. The larger one was vigorous and exhibited no abnormal symptoms. The smaller was white, anemic, and puny; he carried a rapid pulse and a rectal temperature which varied during the first two weeks between 97° and 103° F. The mother had very little milk, but of fairly good quality: the larger boy took all he could get without any bad results; the smaller boy was disturbed after each nursing, and once or twice after nursing had a collapse which nearly ended his earthly career; to be followed by a reactionary temperature up to 103°. Nursing was proscribed for him. On a simple cream mixture he began to grow after going down to three and a half pounds. To-day, at six years of age, there is still a difference in their physical strength and resistance to disease.

In this instance an acute nephritis aggravated a persistently imperfect elimination and induced a premature labor. Can the attendant toxemia be held responsible for the smaller child's pathologic manifestations? Did the milk carry a toxin which the stronger child could antidote and eliminate and which the smaller child was unable to dispose of? Or was his distress after nursing simply indigestion?

Case III.—Mrs. T. became pregnant for the first time at the age of thirty. Since childhood she had never en-

joyed robust health. Her general health during the first eight months of pregnancy was exceptionally good for her. She was under the care of a capable old-school physician, who made analyses of the urine every second week during the whole period of gestation. He reported nothing abnormal until about the completion of the eighth month when albumin with casts appeared in the urine.

Labor was induced at eight and one-half months; was long and terminated instrumentally. The child was well nourished and vigorous at birth, but was soon recognized as a sick child. Its temperature was not taken until the third day when it was found to be 104° F. For two weeks it was a very sick child, whose life was despaired of.

Now at one year the child is well nourished and fairly well developed: it has good muscles and its limbs are constantly in motion.

Its sense of hearing seems normal. The eye is normal in appearance, but the child hardly has any more sense of sight than an appreciation of light. He makes no effort to sit up, cannot balance his head alone, makes very few purposive movements of the hand and exhibits little mental ability.

It is my impression that the child was poisoned before birth, that he suffered with encephalitis as a result of the toxemia, and that the arrested mental growth was due to the damage done during the last week or two in intra-uterine life and the first two weeks after birth.

The mother's health is still poor, and at the time of my examination there was still a trace of albumin in the urine.

I found nothing to warrant a suspicion of either paternal or maternal syphilis.

I could add many more histories which would show the occurrence of infantile disturbance following maternal toxemia, but such cases occur under the observation of you all; repetition will add nothing to solving the problem of what may be the effect of a maternal toxemia upon the child.

PUS IN THE FEMALE PELVIS.*

BY HOMER I. OSTROM, M. D., NEW YORK.

When all things are considered, pus in the female pelvis is one of the most important conditions that may confront the gynecologist. Important, *first*, because of its frequency; and, *second*, because of its possible consequences.

Compared with pus in the male pelvis, it is much more common, for the former is almost always due to a single cause, appendicular derangement, while in women, not only the reproductive organs, but the exercise of their function, exposes to infection, and actively contributes to microbic generation.

We recognize two general divisions of pus in the female pelvis even in its incipiency, free, and circumscribed, or in other words, and more accurately, intra-peritoneal and extra-peritoneal, but it is very evident that conditions may arise capable of converting an extra-peritoneal pus focus in to an intra-peritoneal suppuration. Pus having its origin in the ovaries, tubes, or peri-uterine cellular tissue, may discharge into the general peritoneal cavity. This condition I do not here propose to discuss, but will rather confine myself to circumscribed pus foci, and their treatment.

To facilitate discussion, especially from the standpoint of the clinician, we find a still further division of pus in the female pelvis—suppuration in preformed cavities, and suppuration in the cellular tissue. This enables us to differentiate, pathologically, pus in the fallopian tubes and pus in the ovaries—preformed cavities—from pus in the cellular tissue that surrounds the uterus and that lies between the peritoneal layers of the broad ligaments. A well-defined line exists between these two varieties of pelvic suppuration. It scarcely requires statement at this time, but the fact is worth remembering, that suppuration here, as elsewhere, is always due to the presence of pus-producing micro-organisms.

With the life history of the reproductive organs, pus in the female pelvis is inseparable associated. The exercise of the purely sexual function is etiologically associated with pus

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in preformed cavities, pyosalpinx being rarely traceable to other causes than gonorrheal infection, while pus in cellular tissue, an extra-peritoneal abscess—collections of pus between the folds of the broad ligaments,—has its origin most commonly in infection through injuries of the lower segment of the uterus received during the puerperium, or in the absorption of septic matter from dirty instruments. Hence this variety is most frequently associated with the reproductive function, and while such a pathological and clinical differentiation is not absolute, it is sufficiently exact to furnish valuable data for diagnosis and treatment. If we make out a pus tube, we may reasonably suspect gonorrheal infection until such a possibility can be eliminated, but we will not forget that pyosalpinx may be caused by infection from the lower bowel—*bacillus coli communis*.

A peri-uterine abscess, including within the meaning collections of pus in the broad ligaments, in the utero-sacral, and utero-vesical spaces, will almost invariably owe its origin to absorption by way of the lymphatic channels of the uterine os, or of the external genitals, thus becoming a more truly surgical infection. With reasonable certainty we may, therefore, consider pyosalpinx specific, and other pus foci in the pelvis non-specific. The bearing of this division upon prognosis and treatment becomes obvious.

There is little likelihood that a pus tube will rupture, but there is a constant danger that its *ostium abdominale* may not be closed; that under increased pressure it may give away, and the general peritoneal cavity become infected; a deadly form of peritonitis if the pyosalpinx is acute, but attended with little risk if the malady is chronic, inasmuch as time usually renders such purulent collections sterile. We will refer to this later.

Neither is pus in the cellular tissue very liable to open into the peritoneal cavity, its course is more frequently in the direction of least resistance, beneath the peritoneum, in the loose subperitoneal cellular tissue. Hence the enormous collections of pus sometimes found in Douglas' cul de sac, dissecting the peritoneum from the pelvis, and even from the sides of the uterus. In these cavities the peptonizing action of the micro-organisms, or their ferments, is marked, and aids in increasing local tissue destruction.

The diagnosis of pus in the female pelvis presents few diffi-

culties if we remember that fluctuation is not as early made out here as in other locations. Especially when the suppuration is in the Fallopian tubes fluctuation is deep until near pointing, and even then the inflammatory infiltration of the tube which always accompanies pyosalpinx, gives a degree of hardness and resistance to the mass that without regard to its clinical history may suggest a solid growth, and after the pus is evacuated—the tube not having been removed—nodules of exudate remain, almost fibrous in their hardness.

To a certain degree this is true of all circumscribed pelvic suppuration, but is more especially observed when associated with pus in preformed cavities. Even when the accumulation is vast, the mass in the vaginal fornix assumes the feeling of a fibroid, and if this is old and the acute symptoms of pus formation have subsided, diagnosis will rest upon the previous history of pelvic infection and the absence of abrupt boundary lines; the mass wherever situated seems to have been poured into the pelvis, and, conforming to its irregularities, hardened. A pus tube is hard and convoluted, but these convolutions are not abruptly defined. Fixation of the uterus is another indication of pus in the pelvis, and serves to differentiate the suppuration mass from fibromata of the posterior uterine wall, which does not interfere with uterine mobility.

The general principles for the treatment of pus in the female pelvis will not differ from those that govern the treatment of pus elsewhere—evacuation. This being determined upon, two questions present for settlement—the time to operate, and the site of operation.

In the matter of pyosalpinx we will remember that old collections of pus in the Fallopian tubes cease to be progressive, the pus loses its infectious properties, the pyogenic organisms die, and the pus becomes sterile. From such collections of pus there is no reaction, even if they discharge into the general peritoneal cavity. I have seen many such cases. An old pyosalpinx has ruptured into the general cavity without causing more than mechanical shock. No reaction follows, and septicemia does not develop. Upon opening the abdomen there is free sterile pus, an entire absence of inflammatory exudation, and consequently no effort to wall off the purulent fluid.

Such a history, however, does not relieve us from our obliga-

tion to evacuate the pus cavity. It is dangerous to wait for the pus to become sterile, for in the meantime the abscess may open into the peritoneum, and a profound septic intoxication follow.

There are two practical applications of this behavior of the contents of an old pyosalpinx. *First*, knowing the history of the case, it does not call for an immediate operation, a convenient time may be selected; and, *second*, if the peritoneum becomes soiled, there is little danger of septic infection.

Permit me in this relation a brief reference to the toilet of the peritoneum. In the majority of abdominal operations, beyond the assurance that there is no hemorrhage, and that all blood-clots are removed, any further cleansing of the viscera than may be required by the operative technique is uncalled for. The rule to disturb the abdominal and pelvic contents as little as possible, recognizing that the chief anatomical protection against infection is an intact peritoneum, will always be paramount. But when the peritoneum is soiled with suspected material, the question is different; we must minimize the possibility of absorption by removing the septic and noxious matter. The best method of accomplishing this is still under discussion.

The practice still prevails among some surgeons of wide experience, and enviable success, of irrigating the abdominal cavity, with the expectation that the irrigating fluid will be carried to every part of the peritoneum, and wash away with the return stream all septic material, but there can be little doubt that such a procedure in many instances actually forces infection into parts that would not otherwise be reached. If we could be certain that the stream of water is brought behind the pus, which would thus be forced out, the wisdom of this method of performing the peritoneal toilet would admit of no question, but not only are we unable to do this, but we may feel assured that "dead spaces" are in such manner formed among the abdominal and pelvic viscera, that cannot be completely emptied, even by continued irrigation. Septic material is thus pocketed in many places, which then become foci of infection.

Only exceptionally will irrigation, or flushing, form a part of the toilet of the peritoneum. Even with free active pus in the cavity, it is, I believe, a doubtful procedure, for the very

reason that we are liable to force the pus into sterile parts, or to break down adhesions that Nature has formed for protection.

By far the safer, and certainly most efficient, method of cleansing the peritoneum, is by sponging, not with dry sponges, they irritate the peritoneum, but with sponges wrung out in hot sterile salt solution. These sponges should be carried gently among the intestines, not blindly and without method, but systematically, opening with the fingers of the left hand passages for them to traverse, meanwhile exercising the utmost care not to injure the peritoneal covering.

Removing lymph exudate, frequently at the expense of the underneath serous membrane, cannot be too strongly condemned. This exudate is sterile, and is furnished by nature to limit contamination, and strengthen weak places in the intestinal wall, and should not be interfered with. Cases that formerly I irrigated and drained, I now cleanse with sponging and close without draining. I, in addition, avail myself of the physiological law that absorption is most active in the region of the diaphragm, and in uncertain cases always place my patient in the semi-upright position (Fowler's position), thus throwing the fluids into the pelvis, where absorption is the least active. This is a more efficient method of draining the peritoneum than by any mechanical means, for fluid in the abdomen in a large degree prevents adhesions between opposing surfaces, while the adhesions formed around mechanical drainage shut off the general cavity in a few hours.

The diagnosis of pus in the pelvic connective tissue is sometimes difficult to make out. The subjective symptoms will assist in the differentiation. Belonging to all ovarian diseases that induce intra-ovarian tension, there is a peculiar sickening pain that follows the course of the anterior crural nerve, and extends backwards to a point just below the crest of the ilium. This may be continuous, but is greatly aggravated by pressure, as the examining finger.

Such is quite different from the sore, throbbing, "gathering pain" that characterizes cellular suppuration. In both conditions there is a mass at the side of the uterus. When the ovary is involved this remains more or less spherical, but when the pus is in the cellular tissue, the layers of the broad ligament, between which it is usually situated, are dissected up, the

tumefaction comes to occupy the posterior cul de sac and the utero-sacral space. The dense attachment of the pelvic peritoneum at the median line places a barrier at that point to the direct passing of pus from one side of the pelvis to the other, and hence we not infrequently find a sharply defined boundary at the vesico-uterine space when the suppuration spreads forward. We are, therefore, justified in assuming that when pus develops on both sides of the pelvis, it is from corresponding foci of infection.

Occasionally the initial step in the formation of pus in the pelvis is a diffuse cellulitis, which later breaks down in one or more spots. We then find the vaginal fornices entirely lost, the pelvis seeming to be filled with a resisting mass in which the uterus is fixed and set. Following this condition, traceable to injuries received during parturition, great quantities of pus may form in Douglas' cul de sac, which ultimately, as a pelvic abscess, fills the pelvis.

The prognosis of pus in the female pelvis is grave: *First*, as concerns life, because of the ever present danger of rupture of the pus sac, and consequent peritoneal contamination; and, *second*, as concerns the health of the reproductive organs and their function, for when the Fallopian tubes are involved impregnation cannot take place, and when the peri-uterine structures are the seat of invasion, adhesions, and the changed relations of the uterus, and the adnexa, are also certain to interfere with the parturient evolution necessary to carry the fetus to full term. Hence miscarriages are almost certain to follow.

Septic infection is not as liable to attend pus in preformed cavities, as it is when suppuration occurs in the connective tissue spaces. A large pyosalpinx may exist with an astonishingly low degree of septicemia. On the contrary septic intoxication forms a very prominent and early clinical feature of peri-uterine suppuration, but the comparative immunity that belongs to pyosalpinx must not induce delay in applying sound surgical principles to the treatment of any collection of pus in the pelvis—free opening and drainage.

When possible, and very few exceptions will be found, the operation for evacuating pelvic pus should be through the vagina. Pus tubes invariably fall into the posterior uterine space, where they soon become adherent. Incising such a sac

through the vagina is a minor procedure, but may be regarded a radical operation if we disabuse ourselves of the tradition that a cure depends upon the removal of the tube itself. This is not essential. A free incision, thorough cleansing, and satisfactory provision for drainage are all that is necessary. Under this treatment even the most extensive pus cavities soon become obliterated.

In order to more completely evacuate the sac, it may sometimes seem advisable to make direct pressure from above on the mass. This can best be done through an abdominal incision, but such does not necessitate opening the pus cavity, which should still remain extra-peritoneal. The bimanual manipulation thus made possible insures perfect evacuation, and renders the use of the curette safe, as the instrument operates from below, against the hand in the abdomen, minimizing the danger of penetrating the abscess wall.

In the treatment of pus in the pelvic connective tissue, the question of removing the sac will not enter, but these cavities do not close as early as preformed cavities, there being no normal muscular fibers to aid in the contraction of the sac. The general principles governing the treatment of the two varieties of pelvic suppuration are otherwise the same.

As in all operations involving the base of the broad ligaments, we will remember the position of the uterine arteries when incising an abscess in this location. We will also consider the course of the ureters. When the collection of pus is large the natural anatomical relations are greatly disturbed, and while the possibility of wounding these organs is remote, it should always be borne in mind. On several occasions I have demonstrated the uterine artery coursing through the posterior wall of a broad ligament abscess, by my finger in the pus cavity, and I, therefore, think it possible that the vessel frequently occupies this position. The artery to be avoided in opening the posterior vaginal fornix is the posterior azygos branch, the same that sometimes gives rise to troublesome bleeding in vaginal hysterectomy, but if the incision in both instances is made close to the uterus, such accidents will be avoided.

My own method of operating on pus in the female pelvis by way of the vagina, is through a speculum, preferablyusco's, which has two blades of equal length, and makes tense

the vaginal fornix. If the incision is behind the uterus the speculum will open antero-posterior; if on the side, and the desired spot is not thus exposed, the speculum may be rotated until it makes tense the desired field of operation. The cervix is then steadied with a curved volsellum, not drawn down for fear of rupturing the pus sac, and a double-edged bistoury plunged into the place before determined upon. By cutting in both directions the incision is enlarged to any desired size. I then irrigate with salt solution—chemicals are unnecessary, if not actually harmful,—and finally swab the cavity with iodine and carbolic acid, which destroys the infected tissues and renders them as nearly as possible antiseptic. As a last step, I pack the cavity *lightly* with the iodoform gauze. While withdrawing the speculum I pack the vagina with the same material. This dressing remains undisturbed for forty-eight hours, when it is renewed, with the exception of the applications of iodine and carbolic acid.

Under this treatment of packing healthy granulations are encouraged, and after the first week there is little danger that the walls of the cavity will close, if the incision is kept open. At the end of this time I usually substitute a rubber drainage tube for the gauze, holding it in place with the packing in the vagina. Two or three weeks will generally suffice to cure even the most extensive collections of pus.

When it is thought advisable to assist the emptying of the pus cavity by pressure from above, the abdomen may be opened, the greatest care being observed to render this step aseptic, and the whole hand—one or two fingers will not be sufficient—carried down to the mass in the pelvis. It insures thorough evacuation, but it may well be questioned whether the advantages gained are equal to the additional surgical risk involved.

42 West 48th Street.



MEMBRANOUS DYSMENORRHEA: A CASE.*

BY KATHERINE KURT, M. D.

Because of its frequency and the obstinacy in treatment the following case of membranous dysmenorrhea is presented, with the medicine producing results satisfactory to both patient and prescriber.

Mrs. H., aged 28 years, married five years, well developed physically, called September 24, 1901, for relief from painful menstruation and other pelvic symptoms.

She has borne no children, never been pregnant, health in general always good. Gets sick from riding on water or on cars. An aunt, her mother's sister, died from scirrhus of the right mammary gland, involving axillary glands.

The menstrual period was established at 14, regular and painless the first three months, then, from taking cold while skating, the function became irregular and painful, and she has suffered more or less ever since. At one time she was said to be chlorotic.

Much medicine has been taken from various sources, including a period of three years in local treatment and curettage. Her main symptoms recorded in the notebook were: Acne on the face and neck, behind the ears, partially developing into pustules each month, then quiet down and recur again; pelvic aching and pains, the latter shooting upward. Occasional morning nausea and vomiting of bile.

Before menses, mammary glands became hyperemic, tender, heavy, feels need of support for them, bloated feeling, flow irregular, too soon or retarded.

After menstruation, soreness at umbilicus, with offensive discharge. During menstruation, ill, feels unequal for her usual work, must lie down, pelvic pains aggravated. Passage of clots and membrane like meat shreds. Later flow becomes watery, leaving a greenish stain. Normal stool daily, followed by one or more of brownish mucus, preceded by griping in bowels.

From date of first visit to February 22, 1904, she was given

* Read at the meeting of State Homeopathic Medical Society of Ohio, May 15, 1907.

the following remedies: cactus grand, 3x, bry. 6x, natrum phos. 6x, sulphur cm, kreos 30x, nux vom. 6x, iris vers. 3x, con. 6x and 12x, phytolacca dec. Some of these were given for temporary illness. The chronic difficulty would abate and again renew. I then concluded that, since stringy mucus cast off from the bowels is of tubercular nature, possibly the membrane thrown off from the inner surface of the uterus at the menstrual function is of the same nature, and proceeded to give two doses of tuberculinum 200 once a week.

Within a month she came in declaring the medicine did much good. Leucorrhea was worse, but the pimples on face and neck which had previously developed into partial pustules now opened and discharged and seemed to be healing.

April 5, 1904. Dizzy at the start, flow less painful, passed one mass an inch long and large as a goose quill. Felt well the rest of the month. Another dose of tuberculinum 200 was given.

May 2d. Doing and looking well, acne disappearing, last menses least troublesome. During the remainder of the year she received bryonia, podophyllum, natrum sul., nux vom., kali. bich., for indigestion, diarrhea, etc., with no menstrual trouble.

Feb. 27, 1905. Owing to husband's continued illness she loses much sleep, is anxious and restless, nervous, sighs, and is given ignatia 3x, followed by zinc picricum 6x.

May 5, 1905. Calls for relief from nervousness, back and shoulders itch. Acne with pus, perspiration at axillæ, feet moist. Bowels constipated before menstruation. Standing long caused pain in coccyx, aggravated during menstruation. Remedy, three doses silicea 30x.

May 27th. Better. Silicea 200.

October 11th. Well all summer. Return of dysmenorrhea with sore mammary glands and discharge of membrane at last period. One dose conium 3m.

March 3, 1906. Leucorrhea, thin, irritating, with pains from the uterus upward, accompanied with sensation of menstrual escape. Medorrhinum c m.

April 24, 1907. No return of dysmenorrhea or discharge of membrane. Declares herself well in this respect.

In my judgment the point to be learned from this case is that the underlying cause of the monthly exfoliation of a part or all of the mucous lining of the uterus, with the attendant suffering, is tubercular or scrofulous.

Proof for this is shown in the healing power the highly potentised remedy, made from tubercular virus, has over the disease.

WHEN TO OPERATE FOR RETAINED PLACENTA.

BY F. C. SPATES, M. D.

The removal of the devitalized after-birth of a premature child by the curette is of frequent occurrence with some physicians who do not give nature an opportunity to expel it.

Twenty years ago it was of infrequent occurrence, and it is only within the last few years that it has become to be so frequently performed.

I have come to this conclusion that nature must be assisted sometimes to rid herself of decomposing tissue that, if retained too long, would menace the welfare of the body; therefore, I would not condemn a judicious use of the curette for retained secundines.

Many of our night calls are of this nature, and we find often that considerable hemorrhage has taken place prior to arrival, but not of a serious degree, in the major part of our cases, but in some cases we find that there has been a large loss of blood and profuse bleeding, and on examination very little dilatation of the uterus and spontaneous evacuation of contents apparently a good ways off; a case of this kind, especially if you have vomiting and syncope and a rapid pulse, would, to my mind, be a case for immediate operation and a wiser measure than tamponing vagina. I would suggest that it be performed without delay, night or day. Such a case would need assistance in the way of some competent person to give an anesthetic. If you find there have been pains and slight hemorrhage for several days and on examination you find a mass protruding from the os, I think it is wise to remove it before leaving house, and generally in such cases it is not necessary to give an anesthetic if you have a courageous woman and one that is willing to endure ten or fifteen minutes' pain, which a good many testify is not so severe as the pains of contraction.

The preceding management of cases not attended with fever and other symptoms of sepsis would be my *modus operandi*.

In a large percentage of cases we are never called to the home till after the discharge of the fetus, and sometimes several days or weeks have elapsed since the fetus escapes, but the flow and pain continues, the former being of a malodorous character, and in addition chills and fever. If on exam-

ination the os is closed, immediately dilate it and empty uterus under anesthesia. It is not uncommon for one to obtain the placenta in one mass, it having become detached from uterus and in lower segment of womb, but the rule is that some of it is still adherent and must be detached by instrumental aid. The only safe guide the operator has of the uterine surface being clean of placenta is the sound received as the curette passes over the organ.

I think it is the rule of the operator to use irrigation simultaneously with the manipulation of the curette, or the use of the irrigating curette; I have used the irrigating curette and also performed curettage, first concluding with irrigation to wash out any piece that might have remained; I think the irrigating curette is the better way if you are going to use irrigation at all. I saw an operation of this kind last winter at one of the hospitals in Chicago, the operator using the dry method, which was curettage first, then cleaning out uterus with sterilized gauze.

This was at a clinic, and operator told the class that this was the safer of the two. I have tried it two or three times since, but from this limited experience I can't state which I prefer. I can't recall that I ever had any serious results following this operation, but have had some experience that creates a desire to offer some suggestions: viz., care must be observed not to dilate the os too much for fear of laceration, which will be a source of infection, especially in those cases where sepsis has preceded your operation. If you are performing the work without anesthesia, and you find it more adherent than you anticipated, and your patient is complaining of pain and frequently asks you "if you are not most through," and vomits, and says she is going to faint, etc., this is a condition that will tempt you to hasten or stop before you would if the woman were under an anesthetic. In such cases, where you are managing it alone, you may leave part of after-birth unremoved; this may come away spontaneously, or it may set up hemorrhage or sepsis later on, not serious, but frightens your patient, and in a good many instances the operation will have to be repeated. In conclusion, I wish to state that I have never known of fatal cases from hemorrhage or sepsis, and am not able to say which condition is attended with the most danger.

HEART DISEASE IN RELATION TO PREGNANCY
AND LABOR.

BY G. F. BLACKER, M. D.

I have chosen to write upon heart disease complicating pregnancy and labor: first, because it is an important matter, and of not infrequent occurrence; and, secondly, because the teaching in some of the current text-books is, I venture to think, erroneous, in that it exaggerates the danger and the mortality arising from this complication of labor.

If a patient becomes pregnant who has a valvular lesion of the heart, what are the special dangers which are likely to occur during pregnancy, during labor, and during the puerperium? During the course of the pregnancy the two main dangers will be failure of compensation and the occurrence of degenerative changes in the heart muscle with consequent cardiac failure. Failure of compensation does not occur in the majority of cases of valvular disease complicated by pregnancy, because as a rule the compensation is sufficient to meet the increased demands thrown on the heart by the pregnancy and the patient consequently has no symptoms. If symptoms do arise, they are those which are met with in ordinary cases of uncompensated heart disease. The symptoms may begin quite early in the pregnancy, even in the first three months, and the patient may complain of pain at the heart, palpitations, shortness of breath, and swelling of the extremities. In more severe cases there is likely to be marked dyspnea, albuminuria, edema of the lungs, with cough and perhaps hemoptysis and sleeplessness.

A good example of the ordinary course of a case of double mitral disease complicated by pregnancy is afforded by the history of a patient whom I had under treatment not long ago. She was a woman aged 32, who had had six children, three of them having been born prematurely. She had suffered from rheumatic fever at the age of 10, and again at the age of 18. She was eight months pregnant when admitted, and on examination she was found to have a double mitral murmur, with edema of the legs, marked dyspnea, the respiratory rate being 30 to 40 per minute, and slight albuminuria. Under ordinary medicinal treatment, and rest in bed, she rapidly improved and lost all her symptoms. That is what usually

happens in the majority of cases of valvular disease complicated by pregnancy, where the failure of compensation is but slight.

This patient was a very poor woman, with a poor home; and as we were anxious that she should be delivered before her discharge from the hospital, for fear the symptoms might recur if she was allowed to return home, we induced labor at the thirty-eighth week by the introduction of bougies into the uterus. The child unfortunately was born dead, and presented the appearance of having been dead some little time. The mother did well, and on her discharge the systolic murmur had disappeared, but the presystolic murmur was still present.

This is a typical example of double mitral disease complicating pregnancy but yielding to ordinary treatment. We must, however, bear in mind that in this case labor was induced not on account of the patient's symptoms, but to avoid the danger of a relapse after she had left the hospital during the time she was waiting for her confinement. If a patient develops failure of compensation she is likely to present, besides the symptoms due to her heart disease, special symptoms referable to the pelvic organs. For instance, in cases in which the failure affects mainly the left side of the heart, abortion is very likely to occur. I have an interesting specimen of a frozen section of the uterus at the tenth week of pregnancy, from the case of a girl who died of mitral disease. In this case hemorrhages occurred into the placenta, the decidua vera, and the decidua reflexa. As the result of the failure of the systemic circulation the nutrition of the walls of the small arterioles suffers, and small hemorrhages occur, especially in the soft decidua of the uterus, with a tendency to resulting abortion. This accident is probably more frequent in pregnant women with heart disease than it is in healthy women. Some observers assert that abortion does not occur more frequently in these cases, but on the whole I think it does. I think we may certainly conclude that there is an increased tendency for women to abort when their pregnancy is complicated by valvular disease of the heart with failure of the left ventricle. If the failure affects the right side of the heart, the patient is likely to develop congestion and venous stasis in the pelvis as in other parts of the body, and is liable to the occurrence of menorrhagia and of premature labor.

The second danger, which occurs occasionally during pregnancy, is sudden cardiac failure due to degenerative changes in the heart muscle. There can be no doubt, as it has been shown by *post-mortem* examination, that in a certain number of instances during pregnancy fatty degeneration of the heart muscle occurs. And occasionally you may meet with a case in which a woman during pregnancy dies of cardiac failure due to degenerative changes in the heart muscle, with or without any valvular lesion. If such degenerative changes in the heart muscle are present in a patient during pregnancy, then any undue strain, whether it be physical or mental, is likely to bring about heart failure. Death during pregnancy from such a cause is uncommon. Porak, however, has recorded 5 cases ending fatally during pregnancy, of 88 cases of heart disease and pregnancy, and Baranger has shown that fatty degeneration and small hemorrhages may be found in the myocardium, and especially in the papillary muscles, in these cases.

Death from cardiac failure during labor is very uncommon. It may be the result of apoplexy, embolism, or heart failure, and it is no doubt favored by the rise in the blood pressure which occurs during the straining efforts of the second stage of labor and by the mental anxiety which may accompany the process of delivery. But such cases are very infrequent. Quite recently, however, I have had a case of this kind in which cardiac failure commenced during labor, and in which the patient died immediately after labor was accomplished. She was a woman 26 years of age, who had had one child. The pelvis was contracted, and in the first pregnancy delivery had to be effected by craniotomy. She took the anesthetic (chloroform) badly on this occasion, and after delivery there was marked collapse. In the second pregnancy labor was induced at the thirty-fourth week of gestation. The presentation was a breech, and an attempt at cephalic version was made under chloroform, which proved unsuccessful even with the patient in the inverted position. As during the inversion marked cyanosis developed I desisted from the attempt to turn the child, and contented myself with passing bougies into the uterus. This was done at 10 A. M. without any difficulty and without any hemorrhage. The patient soon came round from the anesthetic, and at 2 P. M. had a good pulse and was cheerful and well. About 2.30 P. M. labor pains

commenced, and some *ante-partum* hemorrhage occurred. This continued to a slight degree until about 5 P. M. At this time the patient became rather collapsed and the pulse became rapid and feeble.

At 6 P. M., when I saw her, the pulse was very rapid and small, she was very pale, and complained of pain in the epigastrium. The second stage of labor was well advanced, and the hemorrhage had entirely ceased. The breech was presenting, and there was no sign of hemorrhage into the uterus or into the abdomen. The patient's condition gradually became worse, and the cardiac failure more pronounced, with dyspnea and finally some air hunger. The pulse never recovered, although hypodermic injections of ether and strychnine were given, and saline fluid with brandy was transfused into a vein. I have never seen a case of severe hemorrhage in which saline transfusion did not produce temporary improvement and some change in the pulse; but in this case it had no effect whatever, and there was no doubt the heart's action was extremely feeble. As the condition of the patient did not improve, and we thought there might be some intra-uterine hemorrhage, it was decided, as a last resort, to empty the uterus. A leg was brought down, the body delivered by traction, and the after-coming head perforated, as there was some delay at the brim of the pelvis, the delivery being accomplished within a few minutes. The condition of the heart, however, did not improve, and the patient died half an hour after the birth of the child, before the delivery of the placenta. Unfortunately a *post-mortem* examination was not allowed. There can, I think, be no doubt that the patient died from heart failure, predisposed to by the *ante-partum* hemorrhage which occurred during the first stage of labor, and due probably to degenerative changes in the heart muscle. The patient was a nervous delicate woman, and, as I have mentioned, suffered from an excessive degree of shock after her first confinement. There were no symptoms or signs of any abdominal trouble, beyond the pain in the epigastrium, which might have been cardiac, and no sign of hemorrhage into the abdomen or into the uterus.

Supposing that a patient with heart disease escapes the dangers of pregnancy and the smaller danger of labor, what are the risks of her condition after delivery has taken place? The heart may give out in one of three ways after parturi-

tion. Immediately after the birth of the child cardiac failure may occur, and this may be brought about by over-distention of the right side of the heart, with resulting paralysis, or by the blood accumulating in the large abdominal veins in consequence of the rapid fall in the blood pressure. No doubt in the majority of cases the failure is due to over-distention of the right side of the heart and cardiac paralysis occurs with cyanosis and urgent dyspnea. In other cases it is due to the accumulation of blood in the abdominal veins, very little blood finding its way to the heart, and the hypertrophied and dilated heart failing because of the small amount of blood which is returned to it. Berry Hart has observed seven cases of death from mitral stenosis, all with symptoms of over-distention of the right side, and in one case *post-mortem* examination showed the right side of the heart over-distended and filled with blood and the left side contracted and empty. The patient died of cardiac paralysis, the result of over-distention of the right side. The third way in which cardiac failure may occur is some days after delivery, no doubt from degenerative changes in the heart muscle and from a failure on the part of the diseased heart to recover from the strain of labor. So that after her confinement a woman may die from heart failure brought about in one or other of these three ways.

Recently I have had a case of death after delivery from cardiac failure, in consequence probably of blood accumulating in the abdominal veins. The patient was 38 years of age, and she had had six children and one miscarriage. She had a severe attack of influenza with some cardiac weakness five weeks before her confinement, and had only recovered from this a week before her delivery took place. The labor was precipitate, a very large child being delivered in two or three pieces, after the membranes ruptured. Immediately after the delivery of the child the patient became markedly collapsed, and the pulse began to fail. There was no hemorrhage, external or internal, and the uterus contracted well. Injection of strychnine and ether, and the administration of oxygen produced but very temporary improvement. The pulse became weaker and weaker, the patient became extremely blanched, and developed faintness, marked dyspnea, air hunger, and precordial pain, dying two and a half hours after the delivery of the child. I think the death in this case may rightly

be attributed to the failure of a heart weakened by a recent severe attack of influenza, and brought about by the sudden fall in the blood pressure accompanying a precipitate labor, and the consequent accumulation of the blood in the large veins of the abdomen. The extreme pallor of these patients seems to indicate that they are bleeding, as has been said, into their own veins. On the other hand, the patients who die from failure of the heart from over-distention of the right side become cyanosed and have dyspnea. The third way, as I have mentioned, in which patients may die is from gradual heart failure developing some days after delivery.

Some years ago I had a case in which the patient died on the tenth day after her confinement with cerebral symptoms, the result of extreme cardiac weakness following delivery. She was a woman of 41 years of age, who had had five children and one miscarriage. She was a very fat and rather unhealthy patient. I only saw her for the first time in the second stage of labor, and found a shoulder presentation with a prolapsed cord. Chloroform was administered, internal version was performed, and a large child, 10 pounds in weight, was delivered as quickly as possible. The child was born alive and lived, but immediately after delivery the mother became very markedly collapsed, the pulse failed altogether, and the heart sounds could hardly be heard. There was no *post-partum* hemorrhage, the uterus contracting down well, and there had been no *ante-partum* hemorrhage. The patient's condition was so grave—she was practically moribund—that it was deemed advisable not to attempt to express the placenta. The patient remained in an extremely critical condition for three days. The temperature on the fourth day rose to 103°, and the discharge from the vagina—the placenta being still in the uterus—became a little smelly. Ether and oxygen was accordingly administered, the placenta removed with the hand, and the uterus washed out with 1 per cent. lysol solution. A careful examination of the interior of the uterus failed to discover any signs of a tear in the cervix or in the body. The pulse gradually improved and the temperature returned to normal. On the tenth day, when convalescence was thought to be established, the patient was suddenly seized with very severe pain in the head and right side of the neck, so acute that morphine had to be administered. She became comatose,

had stertorous breathing, with pin-point pupils, and died a few hours after the first onset of the pain. Unfortunately no *post-mortem* examination was allowed, and whether the patient died of a cerebral embolus or of cerebral thrombosis remains undetermined. At any rate, whatever the actual cause of death, it was no doubt secondary to the extreme cardiac weakness which was present during the ten days that she lived after her confinement.

There is another possible sequel of cardiac failure following delivery, and that is a tendency to the retention in the body of various toxic materials as a result of the enfeebled circulation and a failure of the excretory functions of the liver and kidneys. This may lead to other complications, such as albuminuria, may predispose the patient to develop septic intoxication or septic infection, and, as I have already mentioned, may be a cause of degenerative changes in the heart muscle.

Now we pass on to discuss the prophylactic treatment of these cases. How can we avoid these special dangers, or if they do occur how shall they be treated? Let us consider the mortality of cases of heart disease complicated by pregnancy and the prognosis in any given case. As I have told you, there is a tendency at the present time to exaggerate the badness of the prognosis, or, in other words, to overstate the mortality from this condition, and that is due to the fact that Macdonald, who first called attention to the dangers produced by heart disease complicating pregnancy, had an altogether exceptional mortality in the cases he described. Out of 14 cases which he had either observed or collected he had a mortality of 9, or 64 per cent. Much of the teaching current at the present time is based upon these figures, and it is not uncommon to find in text-books the statement that the mortality of heart disease complicating pregnancy is 40 to 50 per cent. There can, I think, be no doubt but that this is an entirely erroneous estimate. Drs. Hicks and French, to clear up this point, have analyzed the obstetric histories of 300 consecutive cases of mitral disease. As a result of their investigations they came to the following definite conclusions: First, that comparatively few of these women are sterile; secondly, that these women are not particularly liable to abort. But, as we have said, this is probably not a correct conclusion, and it must be remembered that in many of the cases the histories

upon this point were inconclusive. The third conclusion is that the majority of such patients bear children quite well. In other words, the majority of patients with valvular disease of the heart pass through their pregnancy, labor, and puerperium with few or no symptoms, and make a good recovery. Their conclusions were based upon 300 consecutive cases, and they found that the mortality, either immediate or within three months—and it is obvious that not only the immediate mortality must be considered, but also that for the following two or three months, since the women may die later on as a result of their labor—was 13.9 per cent. I have collected 453 cases from the literature, of whom 53, or 12 per cent., died. The mortality rate naturally depends on the variety of the heart disease to some extent, but mainly on the condition of the heart muscle. The nature of the valvular lesion is not of much importance; it is the condition of the heart muscle which must be taken into account. If the valvular lesion is well compensated, the heart muscle healthy, and the blood pressure normal, the danger to the patient is very small indeed. If the heart muscle is degenerated, or there is insufficient compensation, the danger is great.

What is the best treatment of these cases? Hicks and French maintain that the treatment of a case of pregnancy complicated by heart disease is to treat the heart disease, and that you need take no account of the pregnancy. And that conclusion being in large part a correct one, we will not waste time by considering in detail the treatment of the heart disease, but will discuss the obstetrical treatment, and mainly the question whether it is desirable to carry out any treatment of the pregnancy besides that directed to the condition of the heart.

If you have a patient suffering from heart disease complicating pregnancy, you will place the patient at rest in bed, treating the heart condition by such rest or by the administration of heart or general tonics. Above all things, you will insist upon absolute rest in bed in the worst cases. Is it, however, ever advisable or justifiable to treat these cases by the induction of abortion or by the induction of premature labor? Is the contention of Hicks and French wholly correct that you need treat the heart, and the heart only, or is it necessary sometimes to cut short the pregnancy? I believe it is,

and that in many cases the correct treatment is not only to treat the cardiac symptoms, but to relieve the patient of the strain produced on the heart by the pregnancy by the induction of abortion in some cases, or by the induction of premature labor in others. And I am of opinion that there are more cases in which the induction of abortion or of premature labor is good treatment than is generally supposed. It may be said that the immediate danger is increased by the induction of abortion or of premature labor, because, as I have pointed out, the danger after delivery is greater than during pregnancy and labor. Therefore, you may from time to time, as in other severe diseases complicating pregnancy, such as albuminuria, meet with cases in which the result of inducing premature labor is markedly to increase the danger to the patient for the time being. But, in the majority of cases, if such interference is really necessary, you will by its adoption improve the patient's condition, and not make it worse.

The following case is a good illustration of the class of case in which abortion should be induced. The patient, a woman aged 32, had had two children and three miscarriages. She was suffering from double mitral disease, with marked dyspnea, edema of the lungs, cough, and hemoptysis, and was markedly anemic. Considerable improvement took place with complete rest in bed and medicinal treatment, but the cough continued to be very troublesome. The edema of the lungs did not clear up entirely, and after a time her general condition remained stationary. As she did not continue to improve, and as she was five months pregnant, so that she had a prospect of another four months before her confinement could be expected, in which the strain on the heart would continue to increase, I decided to induce abortion by the rapid method under anesthesia. The cervix was accordingly dilated under ether to No. 26 Hegar's dilator, and then to a diameter of three and one-fifth inches by Bossi's dilator, and the uterus emptied. A considerable degree of hydramnios was present. After delivery the symptoms rapidly improved, the cough ceased, the physical signs of congestion and edema of the lungs disappeared, and the general condition improved very markedly. In such a case as this the induction of abortion is justifiable and occasionally necessary. If I may recapitulate the reasons why in this case we induced abortion they were: First,

that the patient had marked symptoms of failure of compensation as early as the fifth month, and, secondly, that these symptoms, although they were improved by rest in bed and medicine, did not entirely disappear. We thought further that the strain of another four months of pregnancy, increasing, as inevitably it must, during the latter part of the term, would be too much for the weakened heart, and that, therefore, it was justifiable to terminate the pregnancy. If you decide to induce abortion in one of these cases, then the best method is to give an anesthetic, to dilate the cervix, and to empty the uterus at one sitting. The class of case, then, in which abortion should be induced, is that in which ordinary medicinal treatment has produced no or only very little improvement in the general symptoms, and in which no further improvement in the cardiac condition is likely, so that it is essential that the strain of a long pregnancy should be avoided if possible.

The following case is an illustration of the class in which premature labor may be induced. The patient was 25 years of age, a primipara with double aortic disease. She had some edema of the legs, was markedly anemic, and had severe syncopal attacks from time to time. With treatment by rest in bed and medicine she improved considerably, but when she got out of bed and about she had further syncopal attacks, so that her condition was not quite satisfactory. We tided her over her difficulties as long as possible, but at the thirty-eighth week I determined to induce labor because the syncopal attacks were still rather frequent, and it was therefore thought best to put an end to the pregnancy. A Champetier de Ribes's bag was introduced under an anesthetic, and when the first stage was completed the patient was delivered under ether with forceps. The child is alive; the mother did well, and at the present time has lost all her cardiac symptoms. Some authors hold that the induction of premature labor increases the danger to the patient; but I do not think that this is so, because if you induce premature labor you can make arrangements to carry out the delivery in the best conditions and with the advantage of skilled assistance. I think, then, that in the case of patients who do not improve under ordinary medicinal treatment, it is wiser to terminate the pregnancy rather than to let the patient go on to full term. This does not agree with the conclusions of Hicks and French based upon the obstetrical

histories of their 300 cases. They contend that the induction of premature labor is not necessary, since the great majority of their patients bore a considerable number of children with little or no danger. No doubt that is true of the general run of cases; just as it is true that the majority of cases of valvular heart disease complicated by pregnancy do very well with ordinary medicinal treatment. But you will meet with exceptional cases from time to time which require not only medicinal treatment, but, in order to lessen the strain thrown upon the overburdened heart, require, further than this, the induction of abortion or of premature labor.

The treatment of the condition at the time of the patient's confinement is of some importance. You must guard against the risk of cardiac failure, and if there are signs after the delivery of the child that the right side of the heart is over-distended, you should encourage *post-partum* hemorrhage, or you should actually bleed the patient. Such a mode of treatment undoubtedly yields good results where there are symptoms of over-distention of the right side of the heart and consequently danger of paralysis. Where the patient is pallid and the pulse very small, with no signs of over-distention on the right side, and where it is probable, therefore, that the blood is accumulating in the abdominal veins, the intra-abdominal pressure should be maintained at the time of delivery by the use of a sandbag or a tight binder, and appropriate means must be taken to stimulate the heart's action.

There remains now for our consideration only one question, and that is the truth of the dictum laid down in many books, that a patient with heart disease should not marry, or if she does marry she should not have children, or if she does have children she should not suckle them. Such a dictum, you will agree, is too sweeping. The majority of women with heart disease pass through their pregnancy and confinement with perfect safety and have no symptoms, and therefore it is not right to say that a young woman who has heart disease should never marry. If her heart disease is compensated and there are no symptoms, she may marry. Cardiac failure probably will occur sooner or later, as Hicks and French point out, whether she becomes pregnant or not. The bad effect produced on the heart by pregnancy is, on the whole, not sufficiently marked to justify you in advising a patient strongly

that she should not marry. It is true that if she marries it will be better for her not to have children, and it is true that if she does have a child she should not suckle, but it is not right that a woman with heart disease should be forbidden to marry. Although the danger is undoubted, and the mortality is as high as 12 per cent., yet it has been exaggerated, and the majority of these patients do perfectly well, and run no very great extra risk. So that a young girl with heart disease which is compensated, and which is not complicated by any accompanying disease of the lungs or other viscera, may be permitted to marry. Her heart will probably fail sooner or later, whether she marries or not, but whether the time of the onset of such failure of the heart will be precipitated by child-bearing is a matter which admits of argument. There probably will be some precipitation, but it is doubtful whether the risk of this is so marked as to justify you in denying her the right to marry.



THE TREATMENT OF OCCIPITO-POSTERIOR PRESENTATIONS.

BY DAVID HARDIE, M. D.

Occipito-posterior presentations occur in about one-third of all vertex presentations, and of these 85 per cent. lie with the occiput to the right and 15 per cent. to the left. In nearly all such cases, rotation forwards takes place sooner or later before the termination of labor, but it is estimated that in from 1.9 to 4 per cent. this does not occur. Apart from the danger of severe rupture of the perineum in the latter cases, the prolongation of labor in all occipito-posterior presentations, amounting to at least three or four hours, is a matter of great importance to the mother and child, as well as sometimes of concern to the accoucheur.

Various expedients have been resorted to to effect rotation, but I shall consider only those that have been found by me most useful in practice.

Should the position be ascertained at the commencement of labor, before the membranes have ruptured, rotation by external manipulation is an ideal method, and may be success-

fully accomplished, but as an error in diagnosis may be made, and the patient is seldom seen in time, the practice of this method will necessarily be limited.

When the head has entered the brim—the membranes being entire—the only thing that may be done is to place the patient

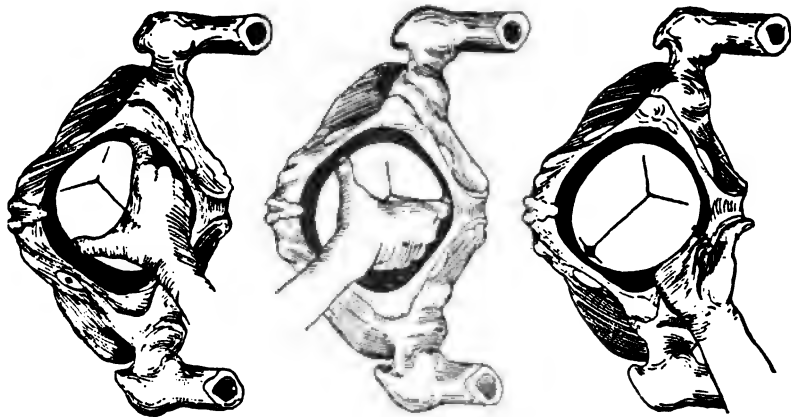


Fig. 1.—Showing position of hand (1) before rotation, (2) after rotation, and (3) ready for lower blade of forceps in right occipito-posterior presentations.

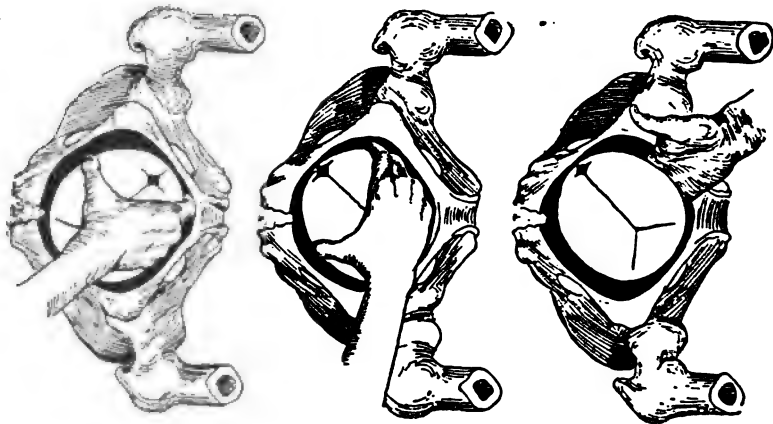


Fig. 2.—Showing position of right hand (1) before rotation, (2) after rotation, and (3) ready for upper blade of forceps in left occipito-posterior presentations.

under the most favorable circumstances for natural rotation to take place. Bearing in mind that the center of gravity of a child lies toward its back, the latter, when the patient is in a recumbent position, tends to gravitate round the axis of the

child to a lower plane. Assuming that the occiput enters the pelvis in the posterior part of the right oblique diameter, the occiput has a tendency to occupy the transverse diameter, if the patient lies on her right side. Hence when the occiput is to the right, she should lie on her right side, and *vice versa*. One cannot, of course, expect much from attention to this point, but I have apparently seen it do good, and, moreover, it has this decided advantage, that as the occiput generally lies to the right, the patient appreciates the change of position. Beyond this nothing whatever should be done to assist rotation until *labor has well advanced into the second stage*. The time then comes for active interference, if need be. Before

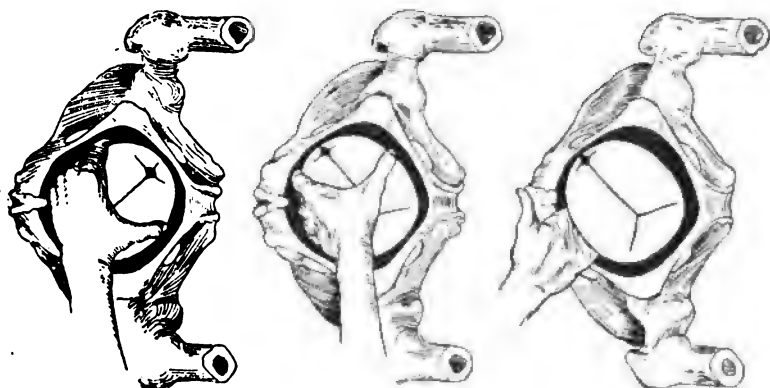


Fig. 3.—Showing position of left hand (1) before rotation, (2) after rotation, and (3) ready for lower blade of forceps in left occipito-posterior presentations.

taking any step in this direction it is necessary to remember what is universally recognized by obstetricians, namely, that the part of the head that is lowest in the pelvis during labor is the part that tends to rotate towards the symphysis pubis. It follows that, if, in occipito-posterior presentations, the posterior fontanelle is within easy reach, the chances are that, in course of time, the occiput will rotate to the front. Similarly, if the anterior fontanelle is the most prominent part, rotation forwards of the occiput is much less likely to take place. In the former case the occiput bears upon a resisting pelvic floor, and is so pushed forwards; in the latter case the occiput is not sufficiently low to be acted upon in this way. Our first object in treatment, then, is to increase the flexion of the head, so that the sinciput may recede and the occiput may occupy a

lower plane in the pelvis, or, in other words, so that the sub-occipito-bregmatic, instead of the occipito-frontal diameter, may pass through the pelvis.

Having ascertained the position of the head, the patient is placed on that side towards which the occiput is directed, if this has not already been done. Flexion is then induced by pressing one or two fingers steadily against the sinciput. The pressure is directed, not only upwards and slightly backwards, but with an inclination to one side or the other as the case may be, with the object of both flexing and rotating the head at the same time. I find it best to begin this, not during a uterine contraction, but between the pains, because of the greater facility with which the position of the head can be altered. Keeping the head in its altered position until the pain returns, steady pressure is kept up during the uterine contraction over the sinciput, with the object of preventing the head from slipping back to its original position. This cannot as a rule be done at first, but by repeating the procedure when the pain passes away, and keeping up counter pressure during the contraction, it will often be found in the end that our efforts are successful.

Time is, however, an important factor to all concerned, and if after a reasonable time—certainly not more than half an hour—there is but little perceptible change in the relative position of parts, we must act boldly and make more radical efforts to rectify the malposition and effect delivery. Fortunately, this is within our reach, without risk to either the mother or child, and fortunately also it can be done during any period in the second stage of labor, even when the occiput is pressing down the perineum. To allow labor to be further prolonged in the hope that rotation will eventually take place, or to allow the head to be delivered without rotation having been accomplished, is surely a stigma on the practice of obstetrics.

Here let me express my decided opinion that in these cases *the use of the forceps for combined traction and rotation should only be named to be condemned, while its use for traction alone can only be justified after an effort to rotate by other means has been made and failed.*

The method which I specially advocate, which is recommended, and briefly described by Herman, advised as a last resort by Jellett, and which seems to me the easiest, safest and

most effectual, is that of *rotation by the hand*. This I divide into two classes, according as the head is in the fairly advanced second stage of labor or bearing on the perineum.

(A) *In the fairly advanced second stage of labor, the progress of the latter being distinctly retarded.* The patient having been anesthetized, is placed on her left side, whether the occiput lies to the right side or the left, because the convenience of the accoucheur is of first importance. *In the case of a right occipito-posterior presentation*, the right hand, with its back looking upwards, is introduced into the vagina. The fingers having been passed along the upper surface of the head, nearer to the sinciput than the occiput, and the thumb placed over the opposite or lower temple, the head is gripped with the whole hand, flexed and rotated, so as to occupy the left oblique diameter with the occiput in front. The hand, in its course, passes under the symphysis pubis, and now lies to the left of the patient, with the palm looking upwards. Without removing the hand the lower blade of the forceps is now introduced. This keeps the head in its altered position until the upper blade of the forceps is applied. With the forceps in position, for a short time, the chloroform may be withdrawn and labor allowed to go on in its natural way, or the chloroform may be continued and labor completed by forceps. I much prefer the latter course. The placing of the hand in position, the process of flexion and rotation of the head and the application of the forceps, take less than five minutes to accomplish, and if the delivery be completed by forceps, the duration of labor is shortened by at least two to three hours. There is no necessity to concern oneself as to whether the body will rotate with the head, as; in the event of this not happening, it does not involve any risk to the child: The head has certainly been rotated by the hand round two-eighths of a circle, and, by the forceps, another one-eighth before the head is delivered, but this may be done without injury to the spinal cord. If there be any anxiety on this point, the left hand may concurrently with the rotation of the head endeavor to rotate the body, but in practice it will be found of no importance whether this be done or not. That the body does actually rotate, however, is shown by the shoulders being found during their delivery in that oblique diameter of the pelvis that the head originally occupied.

In the case of a left occipito-posterior presentation, either the right or left hand may be employed. If the right hand be used, it is slipped along the lower surface of the head with the palm looking upwards, turns under the symphysis pubis to the patient's right side, and, when rotation is completed, lies with its palmar surface looking downwards. The forceps is then applied, but, on account of the position of the hand, the upper blade must be applied before the lower. Should the left hand be used for rotation, instead of the right, it passes over the upper surface of the head, with the palm looking downwards, turns round in front of the perineum to the patient's left side, and lies with its palmar surface looking upwards, ready for the application of the lower blade of the forceps. It will thus be seen that when the right hand is used for flexion and rotation purposes in cases of left occipito-posterior presentations, it grips chiefly the sinciput, and sweeps round the arch of the pubes from left to right of the patient, and the upper blade of the forceps is the first to be applied; when the left hand is used, it grips the occiput, and sweeps round in front of the perineum from right to left of the patient, the lower blade of the forceps being the first to be applied.

(B) *In the late second stage of labor, the head being over the perineum.*—Flexion and rotation can be accomplished here, in the manner above described, but on account of the low position of the head, it is unnecessary to pass the whole hand into the vagina. Flexion may be aided by pressure on the sinciput with the left hand, thus materially helping the right or operating hand. I have never failed to rotate the head in this way, without injury to the mother or child, even when the occiput is bearing down the perineum. If, however, the medical man has been in attendance for some time, he should not have allowed valuable time to have been wasted, and should have effected restitution of the head before the second stage of labor had advanced so far. The time for active interference depends upon the progress of the case, and, as the medical attendant is generally sent for long before the occiput has reached the perineum, the time is one entirely of his own choice and which he must decide for himself. I have adopted this means of treatment for some years, and have no hesitation in saying that no other treatment can compare with it in efficiency or safety. Formerly I detested occipito-posterior pre-

sentations, because of the mere loss of time to all concerned; now I rather like them, because they add to the interest of the case.



INTRACRANIAL CEPHALHEMATOMA.

BY E. S. M'KEE, M. D.

This unusually interesting subject was called to my attention by the following rare case, which it was my right good fortune to meet. Multipara, æt. forty-seven, married twenty-seven years, and had given birth to thirteen children, six of whom had died, two being stillborn. I learned that the membranes had ruptured two hours before my arrival and by vaginal examination I made out a breech presentation. Fetal heart was found and beat one hundred and fifty per minute. The labor progressed slowly but delivery was completed with safety, the head being quickly delivered and a fine female child was born. Saw the child the next day and found it doing remarkably well. The next day found it somewhat fretful. I called late on the third day and found the child dead beside its mother, still warm, and she not aware that life was extinct. She gave the following history: the child began having convulsions on the evening of the second day, had two per hour all night till noon the third day when it began having three per hour, and died, having cried five minutes before my arrival. She said that three of her children had died of convulsions, and she gave this one up to die as soon as they came on. She thought the doctor could do it no good, so did not bother him. She called the minister, however, and had it baptized Lillian May.

Autopsy: Body well nourished, fat. Head presenting externally nothing unusual. Scalp incision from mastoid to mastoid, found the skin normal, but between skin and pericranium a large effusion of blood, coagulated, extending over a large part of the left parietal bone and not surrounded by any indurated ridge of bone. On opening the skull found the bones in a perfectly normal condition, the dura mater healthy, but in the cavity of the arachnoid and corresponding to the outer tumor in position was found a large and extensive

clot of blood, causing a depression of the brain in its deepest part, which was one inch to the left of the posterior fontanelle. Depression was one-half to three-quarters of an inch deep. Effusion larger than externally, reaching down to the foramen magnum. No ruptured vessels could be discovered. Other parts normal.

The possibility of the child having received a blow, fall, or injury before, during, or after delivery was canvassed. The father, mother, nurse were separately and collectively examined carefully as to such an event having taken place, but all stoutly and persistently denied that the child had had any injury of any kind since its birth. The mother said she had had none before delivery and the opportunity certainly did not present itself during labor. They were given every opportunity to say that the child had accidentally or purposely received such an injury; they remained firm, however, even threatenings bringing no confession. The death certificate was signed "Intracranial cephalhematoma."

A case of intracranial cephalhematoma was reported by the late Dr. J. L. Cleveland to the Cincinnati Academy of Medicine (Cincinnati Lancet-Clinic, vol. vi, p. 330, 1881). He presented to the Academy a well-nourished child, still born, died probably five days before birth, weighed eleven pounds. Discovered external tumor before delivery, but mistook it for bag of waters. No unusual amount of pressure during labor. Mother had previously borne two healthy children. No miscarriages. Autopsy performed in presence of the Academy discovered an internal tumor and depression of the brain.

West, writing in 1845, was able to find but eleven cases of the intracranial variety. Ruge (Berliner Klinische Wochenschrift, June 15, 1875) reports two to the Gesellschaft fuer Gynecologie. Jackson (American Journal of the Medical Sciences, 1855) reported a case which he post mortemed: Tumor on inside of occipital bone, with ossification of the pericranium. No thinning of bone and no disease externally.

There are some evidences of an inherited tendency to the disease, as repeated cases occur in the same mother, and in my case the mother had other children die of convulsions.

Cushing (American Journal of the Medical Sciences, October, 1894) reports four cases of intracranial hemorrhage of

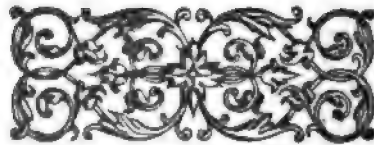
the newborn, in which he has resorted to operation for the cure of this condition, two being successful. The first was that of a child eight days old with unilateral hemorrhage, and the second was that of a child of nine days with bilateral hemorrhage. Cushing operates by turning down one or both parietal bones, opens the dura mater, removes the blood and blood clot, and irrigates the surface of the brain with warm salt water. He recommends operation as soon as the diagnosis can be made, and when operating to avoid exposure and loss of blood.

Diagnosis of this condition is not so difficult as it might seem. Asphyxia at labor, a tense and probably non-pulsatile fontanelle, the onset of convulsions a few days after birth, undue reflex excitability, ocular paresis, and unequal pupils. In the absence of these signs the diagnosis may be made by lumbar puncture, which as in the adult always reveals blood containing fluid in cases of meningeal hemorrhage. These signs of early diagnosis are often not present, for instance, asphyxia at birth. In many cases of spastic paralysis, which were presumably caused by neonatal hemorrhages, labor has been natural. The detection of intracranial cephalhematoma depends, of course, wholly upon the symptoms of brain pressure which it may produce. These are convulsions, stupor twitchings, or paralysis.

Cushing regards intracranial hemorrhage as due to the strain on the corticle veins, from over-riding of the parietal bones during birth. Howell Evans (*British Journal of Children's Diseases*) pointed out that these hemorrhages were due to rupture of the blood vessels passing through the parietal bones from the scalp to the interior of the skull via the sagittal fontanelle, the intraparietal suture, or the parietal foramina, as the case may be; laceration being due to the over-riding during labor of those portions of the parietal bones in relation to these structures. He also affirms that the condition is more liable to occur in connection with that parietal bone which lies outermost. Rupture of these vessels produces a cephalhematoma externa or interna or intracranial hemorrhage, or a combination of these conditions. Hemorrhage, according to Evans, takes place during the reactionary period after birth: subsequent to birth the alteration in the blood

pressure comes on gradually, and the third day the tension is markedly increased, and it is at this period that cephalhematomae are most prominent. Infantile blood is very deficient in clotting powers, as Scherenzies was first to show, and with the rise of blood pressure a weak clot is apt to be displaced. Given, then, that the condition can be recognized, Cushing has demonstrated that there is considerable hope that such cases in the future will be amenable to surgical relief, a marked advance on the present treatment of this hitherto hopeless condition. Trephining alone in young animals, apart even from the opening of the meninges, leads to epilepsy in later life, notably at puberty, as is asserted by Danielewsky, whose works have been confirmed by Demoor. The factors concerned in this process are well worthy of further study. It is clear, however, that such remote possibilities, which have not been shown to be operative in the human, should in no way deter the surgeon from the application of this recognized principle in the treatment of such a grave condition. Once the intracranial hemorrhage has resulted, causing the bloody tumor, the only chance for preventing death or permanent after effects lies in the early diagnosis and immediate treatment of the hemorrhage on established surgical principles. So far it is surprising how rarely this very obvious procedure has been resorted to.

The author of this paper suggested, twenty-three years ago, the trephining of the skull for intracranial cephalhematoma. See Cincinnati Lancet-Clinic, N. S., vol. ii., 1883 p. 322. Also vol. ii. first and second editions of Woods' Reference Handbook of the Medical Sciences.



THE APPENDIX AND PELVIC DISEASE.

A. W. W. LEA, M. D.

Statistics show both that the appendix is often a pelvic organ, and also that disease of the appendix often exists along with disease of one or other of the pelvic organs. Dürrssen found the appendix involved in 3 per cent. of laparotomies for pelvic disease. Robb found appendicitis to be present in 16.8 per cent. of 148 cases of inflammatory disease of the tubes and ovaries, and in 17 per cent. of 64 cases of purulent disease of the tubes. Peterson, who advocates the removal of the appendix in every gynecological operation, examined the state of the appendix in 200 consecutive cases, and found there were histological lesions in 47 per cent., while the appendix was adherent in 18.5 per cent.

The association of lesions of the appendix with pelvic disease may arise in any of three ways: (1) Appendicitis may be the primary lesion; (2) the appendix may be involved as a secondary result of tubo-ovarian disease or of a new growth in the pelvis; (3) the two affections may coexist independently.

(1) *Primary pelvic appendicitis.* Acute pelvic inflammation terminating in abscess is not uncommon as a result of appendicitis; the pelvic abscess may simulate an ovarian cyst which has undergone acute torsion or become infected. Rarely acute pelvic appendicitis may directly infect the uterine appendages and cause a pyosalpinx or ovarian abscess; an example has recently been recorded in which the acutely-inflamed appendix burst into the abdominal ostium of the adherent Fallopian tube. Chronic pelvic appendicitis may develop without the formation of pus, and may cause dense adhesions round the uterus and its appendages; the existence of a unilateral tubo-ovarian mass without evidence of uterine infection suggests the appendix as a seat of disease. In two out of my eight cases of tubo-ovarian disease with disease of the appendix, the appendix appeared to be primary and the tubo-ovarian disease secondary.

(2) *Changes in the appendix secondary to tubo-ovarian disease.* The appendix readily becomes adherent to an enlarged or inflamed Fallopian tube and ovary on the right side; the

appendix may remain healthy in spite of the adhesions, but more often secondary changes ensue either by interference with its nutrition by traction or kinking, or by direct bacterial invasion from the tube and ovary. Out of the 8 cases which I have observed, three were cases in which the appendix was involved secondarily; the primary lesion was in one case hydrosalpinx and hematoma of right ovary, the infection having been probably gonorrheal in origin; in another sclerocystic adherent ovary and Fallopian tube; in the third the uterus was covered by fibrinous adhesions, and the right tube and ovary were adherent to the floor of the pelvis. In two of the 8 cases lesions of the appendix were found together with prolapsed and enlarged ovaries, the two affections having apparently had independent origins. Appendicitis has a marked tendency to follow pelvic operations. Exudation about the pedicle and subsequent adhesions may involve the appendix, or it may become adherent to raw surfaces about the brim or in the cavity of the pelvis. There is especial liability to appendicitis after operation if the appendix is pelvic in position. I have had 4 cases operated upon for gynecological symptoms without complete success, in which the subsequent removal of the appendix was followed by complete recovery, and this in spite of the fact that there had been no symptoms referable to the appendix before the primary operation. In one of the 4 cases it appeared possible that the appendix had been the primary cause of the pelvic peritonitis; in two others the appendix had become adherent at the pelvic brim, and in the fourth it was adherent to the operation scar of the vaginal roof.

The following are my conclusions as to the desirability of removing the appendix when abdominal operations are undertaken for pelvic disease: (1) The appendix should be examined as a routine precaution in all cases of abdominal section for pelvic disease. (2) The appendix should be removed (a) if it lies at the brim of the pelvis or lies in the pelvis; (b) if it shows any peri-appendiceal adhesions or contains a concretion; (c) if it is adherent to any pelvic inflammatory swelling or tumor; (d) if it lies in close relation to the pedicle or raw surface left after the removal of any pelvic organ.

Current Comment.

Ellice McDonald, M. D.:

Investigation of the causes of *puerperal peritonitis* has proved that it is caused by many organisms of which the streptococcus is most prominent, both in severity and frequency. No inconsiderable proportion of cases of puerperal infection are, however, the result of infection with the more uncommon organisms, such as staphylococcus, gonococcus and pneumococcus. The streptococcus, however, is the infecting organism in the majority of cases and was present in 40 per cent. of 498 cases collected by the author, in which the contents of the uterus was studied bacteriologically.

In this study it was interesting to observe that in the earlier cases the gonococcus was but infrequently mentioned, but coincident with improvement in bacteriological technique, the frequency of its isolation from the uterine lochia was much increased. Heretofore widely divergent views have been held in regard to the pathogenicity and frequency of the gonococcus as a cause of puerperal infection. Bumm and Wertheim are inclined to believe that it is not a frequent infecting organism, and Saenger thinks that it may be a more common cause of puerperal and post-puerperal disease.

Most investigations, however, have been wanting in bacteriological thoroughness, and the organism has not been found. The difficulty of cultivation of the organism has been the greatest hindrance to its isolation. Another frequent source of error is that the cultures have most commonly been made soon after the first exhibition of temperature and while the lochia contained much blood and few pus cells. The gonococcus cannot readily be found in smears under these conditions, but is best discovered when numerous pus cells exist and after the infection has advanced somewhat. It was also found, in a study of 17 cases of gonococcus puerperal infection by Stone and the author, that the gonococcus was usually readily found in smears from the uterine lochia after the discharge has become purulent.

Of these 17 cases, 12 had rises of temperature to about 100° F., and when the cases of mixed infection were eliminated nine of 14 cases, in which the gonococcus was found in the

lochia, had such rises of temperature. To consider these nine cases first, the fever was mild in three, moderately severe in four, and in two was severe; in five the onset of fever was distributed over the first week; and in one it was as late as the 13th day. The average duration of the fever was 4.1 days, varying from three cases, in which the fever lasted one day, to two cases in which it lasted nine days.

The fever was in all cases very irregular and followed no definite curve. In one case, the infection was very severe, but in the majority of cases this was not so, and temperature curves corresponding to the so-called "sapremic" or septic absorption temperature were more frequently found, the temperature suddenly rising and returning to normal in three or four days.

The three cases of mixed infection had widely varied courses. One of gonococcus and colon infection had fever on the sixth day, which lasted six days and reached 102° three times. Two cases of streptococcus and gonococcus infection also varied. One had a mild course and the other a most severe infection, resulting in death.

These cases show that the gonococcus may be a cause of puerperal infection and may cause severe constitutional disturbance. These findings have been corroborated by Mayer in a study of six cases of such infection and by an investigation of Little into the bacteriology of the recently pregnant uterus. Little found the gonococcus in the lochia in 16 cases. There were 10 cases with a temperature above 100° F.; six cases were in pure culture, two in mixed culture and two doubtful. There were three cases with a rise above 100.6° F.

From this it may be seen that gonococcus infection in the puerperium must not be disregarded. The first course of the infection is not usually acute; but the late manifestations are more dangerous and severe. The common cause of gonococcus infection in the puerperium does not, as a rule, show marked constitutional symptoms, but the danger of extension of the disease to the fallopian tubes is a very grave one. In nine of the 17 cases such extension was believed to have taken place, as indicated by pain, abdominal rigidity and signs of a mild pelvic infection. In one case this extension was definitely proved by operation.

The disease may extend still further and cause general

peritonitis, as is shown by a case reported by the author in which a diffuse peritonitis resulted from gonococcus infection in the puerperium. The organism was recovered from the peritoneum at autopsy.

The character of the lochia in gonococcus infection in the early part of the puerperium remains unchanged, but after the fifth day it becomes more and more purulent, until it is replaced by a purulent discharge. This discharge, resultant from the endometritis, usually persists for some weeks. During this time the gonococcus may be readily isolated.

An interesting fact in connection with this infection is the malnutrition and intestinal disturbances to which babies of infected mothers are subject. Of fourteen babies, three died, and the majority of the others lost weight. These facts in regard to the morbidity of the babies have been confirmed by Lobenstine in fifty cases.

The influence of labor upon a pre-existent gonococcus infection is most marked. The softened tissues and large, raw surface of the puerperal uterus offer a splendid culture ground for the organism. It usually extends by mucous membrane, but may penetrate the softened uterine muscle. Extension to the fallopian tubes is the common result and late disturbances are the rule.

Two cases of the seventeen came to operation for purulent salpingitis and others have not been traced.

The gravity of this infection exists not so much in its prime infection and immediate constitutional disturbances as in the more remote result of tubal and pelvic disease some time after the puerperium. It is a well known fact that streptococcus infection results in slight anatomic alterations of the pelvic organs after recovery from the infection, but the reverse is true of gonococcus infection, where marked alteration of tissue is the rule and spontaneous recovery from pelvic disease from this cause is the exception.

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I. C. Philbrick, M. D.:

In the obstetric field, marked progress is being made in the *prevention of injuries incident upon childbirth*. The abolishment of ergot in the second stage of labor and the use of general anesthesia at its close have markedly lessened cervical and perineal tears. Professional sentiment, by enforcing the

immediate repair of perineal lacerations and countenancing that of cervical lacerations, tends to decidedly limit the field of minor gynecological surgery. The trend of professional sentiment regarding the menace of neglected cervical lacerations seems away from the extreme views of Emmet and his followers. Obstetricians are most derelict in their attitude toward the induction of premature labor. In private practice it often offers a safe and scientific solution of difficulties arising from a disproportion between maternal and fetal measurements. Why is the profession so slow to adopt a procedure which would obviate so much of maternal morbidity and fetal mortality?

Puerperal fever in obstetrics, as typhoid fever in general medicine, exists as a reproach to the medical profession. As regards its prevalence, a sharp distinction must be drawn between hospital and private practice. While the mortality rate in hospital practice varies between .1 per cent. and .2 per cent, as taken from reports of thousands of cases, its rate in private practice is many times as great. The reproach is not alone upon the licensed medical practitioner, but upon the midwife as well. In the large cities of this country, as abroad, the question of the untrained midwife is a vital one. I consider as the most noteworthy contribution to current obstetrical literature in the past year, the study of the midwives of New York by F. Elizabeth Crowell, a graduate nurse, under the auspices of the Public Health Committee of Neighborhood Workers, which was submitted December 30th, 1906. This report discloses many interesting facts. In 1905, 43,834 births in New York (42 per cent. of the whole) were tended by midwives, and there are 900 to 1,000 in Manhattan alone, 500 of whom were personally interviewed by Miss Crowell; 42 per cent. of these 500 have been foreign diplomas, which testified to the possession of valuable training, doubtless far superior to that of the average graduate of the majority of our schools. There were 3,635 still birth certificates returned in Manhattan, 24 per cent. of which were signed by midwives. Deaths from puerperal fever and puerperal hemorrhage, when compared with the number of deaths of women of child-bearing age, increased from 3.39 per cent. in 1901 to 4.12 per cent. in 1905.

Miss Crowell states that of the estimated 100,000 criminal abortions in New York yearly, the consensus of opinion arraigns midwives as the chief agents.

H. M. Hepperlen, M. D.:

In proportion to its importance, less attention has been given to *anteflexion of the uterus* than any of the uterine disturbances.

While it is true that we may find cases of complete anteflexion which cause little or no disturbance, this condition may also exist from retroflexion, and concerning which volumes have been written. My experience has been that women suffering from anteflexion of the uterus have as distressing symptoms as those suffering from retroflexion. I do not know of a single failure to cure in forty-seven cases I have treated the past four years.

The instrument I employ differs radically from the ordinary glass pessary. Those heretofore used consist of a hollow stem ending in a cup-shaped projection which fits over the cervix and is held in position by two stitches. The difficulty in securing perfect drainage is apparent. The hollow cavity becomes filled with a thick tenacious mucus, which is almost impossible to remove. The odor from this retained discharge frequently becomes a source of annoyance to the patient, and not infrequently may prove the starting point of an inflexion. These objections are overcome in the pessary I have devised.

Instead of the hollow stem, either with one central cavity or those made with numerous openings along the stem which soon become clogged and impermeable, I use a solid glass stem which terminates in a flange sloping downward from the long axis of the stem. The flange is perforated with two small openings for stitches which retain it in position. The advantages which this instrument possesses over the one commonly used, is that while it maintains the proper position of the uterus, it at the same time secures perfect drainage, thereby obviating all danger from infection, as absolute cleanliness may be maintained by an occasional douche.

I introduce them in the uterus as soon after menstruation as possible and leave them there from three to four months. They are always inserted with the patient under ether, as the uterus must be drawn down, thoroughly dilated, and curetted under careful antiseptic precautions, when the tube is inserted and stitched to the cervix. The patient is kept in bed from three to six days, until the uterus becomes accustomed to the foreign body, when she is allowed to get up and go about her work.

Patients never complain of any inconvenience from the tube and most always get relief from their previous symptoms; especially is this true with those who had suffered from painful menstruations.

I had some early cases where the tube came out too soon and had to be re-inserted, but if two stitches are used of silk-worm gut and a reasonably fair bite is taken in the cervix and the ligatures not tied too tight, this need not occur.

I instruct my patient, if the tube does not come away in from three to four months, to come to my office, where I remove it, and discharge them cured.

Of the forty-seven cases in which this treatment has been used ten were married women who had been sterile, and four have since become pregnant. Of all who had suffered previously from dysmenorrhea I know not of one who has not been entirely relieved.

♦ ♦

Etta Charles, M. D.:

If I have been consulted beforehand, I ask the patient to prepare three *obstetrical binders* of common towel-crash, wide enough to reach well over the abdomen and stomach above and to the trochanters below. Darts above and below are made in order that the bandage may conform to the curves of the body. While I am waiting for my "hour" to pass, I apply this bandage myself. I turn the "T" upon the outside of the bandage and roll the bandage so as to unroll to the patient's left, allowing the patient to elevate her hips herself, if she have the strength and disposition to do so. The bandage is then pinned as tightly as the patient wishes it, and when I am ready to leave I pin a napkin to the "T" and fasten it snugly, giving directions to the nurse to loosen the bandage every three or four hours during the day and give the abdomen a gentle massage, after which she should pin it back smooth and snug. If the labor has been normal, with no perineal tears, and convalescence has progressed favorably, I allow the patient to get up the fifteenth day and to remain out of bed several hours, but she is not allowed to walk until the last of the third week, when she gradually resumes her household duties, at which time she abandons the abdominal binder and uses the pelvic binder, something like bicycle trunks, and this she wears from one to six months, depending upon the amount

of stretching the abdominal muscles show and the amount of fat on the abdomen. If the patient be a woman of pride she will want to put on a corset. This I allow, choosing a corset with a long skirt, with the hose attachment at front and sides. She draws up the abdomen after fastening the lower part of the corset, and there is no crowding down of the pelvic viscera, but, instead, all weight has been taken off the pelvic contents and there is a feeling of comfort and well-being.

Finally, by a well-fitting abdominal binder you have restored intra-abdominal pressure, placed a splint to a large, tender uterus, thus favoring the closing of the uterine sinuses and favoring involution. A woman, if possessed of one atom of beauty, is entitled to its preservation.

♦ ♦

J. L. Wolfe, M. D.:

In relation to this let me express my disbelief that *mammary abscess* comes from "caked" breasts, or from breasts over-distended from a secretion of milk too great for the infant's needs. Mammary abscess in the suckling woman comes, in my opinion, from cracked nipples and from cracked nipples alone. In proof of this let me ask my readers if any one of them has ever had a case of mastitis after a miscarriage, or one of gathered breasts following still-birth, always provided the breasts were let pretty much alone, so far as pumping and sucking are concerned. Under these circumstances the unsucked and unpumped breast will swell up and grow painfully hard, but it will not inflame or suppurate. Let me not be understood as saying that an over-distended breast should not be relieved by sucking or by pumping, but the means employed for this relief must be so sparingly used and at such long intervals as not to crack the nipples. This immunity from mammary abscess after miscarriages and still-births is attributed by the physician to his local applications of belladonna or of other milk-drying drugs. But it comes from the absence of the exciting cause of cracked nipples—the suckling child.

♦ ♦

D. MacLean, M. D.:

The previous history of a case of *premature labor* was that of a patient who several years ago carried a child to full term. Labor was difficult, and a consultation of a number of physi-

cians decided that the best and safest method of procedure was craniotomy. The operation was successfully performed, with considerable injury to the uterus and vagina. A year later she became pregnant again, but being informed by her former physician that if she carried to full term it would prove fatal, an abortion was performed between the second and third months.

After she became pregnant the third time, Dr. S. called the writer in consultation. I made a careful examination and found a generally contracted pelvis, male type; all the diameters contracted, but especially the anterior-posterior diameter. Otherwise the patient was normally developed, healthy, vigorous, and well nourished.

She and her husband were extremely anxious to have a child. I discussed with them the risk of Cæsarean section, symphysiotomy, and induction of premature delivery, and advised premature delivery as the safest procedure.

The patient was placed on a cereal and fruit diet; no animal food. At the end of the thirty-third week proceeded to induce premature labor, using the ordinary antiseptic precautions, bichloride douche 1 in 4000, and thorough vaginal scrubbing; then introducing a No. 10 bougie to its full length, and packing the vagina with iodoform gauze, slight labor pains were produced. After twenty-four hours the bougie was removed, a vaginal bichloride douche given, and another sterilized bougie inserted, which brought on more active pains. The patient was delivered of a four-pound boy within forty-eight hours after the introduction of the first bougie.

The child was wrapped in cotton and placed on hot water bottles to keep it warm. It was thus kept as long as thought necessary. The boy is now nine months old, lusty and vigorous.

The point in this case is, that in contracted pelvis and deformities, premature delivery should be resorted to more frequently in the interest of both mother and child.

♦ ♦
Harold A. Miller, M. D.:

In cases of *malposition of the uterus* seen as soon as pregnancy is suspected treatment is effective. Personally, I have been unsuccessful in many cases in correcting the position of the uterus after the third month. Before that time I think it

is nearly always possible to correct the position of the uterus, with the patient in the knee-chest position, either with or without an anesthetic. After that time it is a difficult matter, and in the great majority of cases, where we do correct the position of the uterus, we produce an abortion.

Dr. Watkins brought out the point that he was not much of a believer in favor of pregnancy permanently curing a retro-displaced uterus. I disagree with those who think that pregnancy does not favor the cure of a retro-displaced uterus, because my experience has led me to believe and to know that it can be corrected in the great majority of cases, provided the post-partum treatment has been properly applied.

A great mistake is made in allowing these women to remain in bed too long after delivery. I also think that the dorsal position is pernicious. These women should be allowed to turn over from one side to the other; it facilitates drainage, allows the uterus to come forward, and not to go behind the promontory of the sacrum. The promotion of involution as rapidly as possible has much to do with the permanent position of the uterus. It is well, too, that these women should have, in uncomplicated cases, abdominal massage, beginning it about the second or third day. The woman should be allowed to move around from side to side, and begin sitting up at about the eighth or ninth day. She should be allowed to get out of bed as soon as possible. Tampons used during the puerperal period should, if possible, be changed daily. This is desirable. After a patient gets up, it is possible to apply a pessary, and this should be worn until involution is complete, or until about the end of the sixth week.

♦ ♦

L. J. Hammond, M. D.:

The accidents that occur during the operation for *perineal prostatectomy* are more often the immediate cause of operative death, as well as being responsible for complications that follow, than any other conditions connected with the operation itself, the operation *per se* contributing but little, if anything, toward mortality.

The dissection from the perineal incision to the rectovesical space supplies about all the opportunities for accidents during the operation for perineal prostatectomy. These accidents are especially likely to occur when inflammatory conditions have

both altered the relation and caused agglutination of the parts. These accidents may be classified as follows: Tear of the rectum; tear of the urethra; tear of the bladder-wall; troublesome hemorrhage from accidental injury to the prostatic plexus of veins.

It may not be out of place to state that the first three of these accidents occurred to me in operation on my first case, the responsibility for which I feel lies in the inadequate teaching of the subject in the systematic works. After a most profound and prolonged shock, however, the patient fortunately recovered.

As a means of avoiding these accidents or at least making their occurrence less frequent, it is well before making the incision to stretch the sphincter in order to keep the rectum entirely emptied of all gas, as in these patients it is so often thoroughly distended and therefore kept throughout its course, continuously within the field of operation. When it is collapsed and the dissection is made above the rectovesical fascia, no further danger of wounding it occurs until the anterior edges of the levator ani are brought into view and retracted. This exposes the recto-urethral muscle, where, unless careful partition is made, extensive tearing may take place both into the rectum and urethra.

Experience has taught me, after transverse division of the fascia, to carry my dissection forward toward the bladder, the guide for which is the staff previously introduced into the bladder. If the ano-bulbar raphe, which extends from the posterior extremity of the bulb to the anus, be put on the stretch and divided when reached, the possibilities of tearing the urethra in the dissection should also be greatly lessened.

Unnecessary tear of the urethra, and the bladder as well, can be avoided by making the opening into the membranous urethra adequate to admit the tractor, if one is to be employed, without using force. I am not quite convinced from my experience that tractors are by any means always necessary or indeed that they are not at times distinctly harmful. In one case, I am convinced, the tractor devised by Young did produce extensive traumatic sloughing of the bladder wall. With the ordinary stone searcher I have been able to hook down and fix the prostate quite as satisfactorily as with either the tractor devised by Young or the Parker-Syms.

As the prostate urethra often possesses no walls other than a mucous membrane, tearing can further be guarded against by leaving intact that portion of the prostate next to the urethra, and this, too, without lessening the certainty of permanent good, as it may be said that all prostatectomies are partial and that cicatrization has to be relied upon to complete their destruction. To leave intact the distinct urethral attachment not only removes the danger of extensive tearing of the urethra and bladder, but as well lessens the risk to the ejaculatory ducts and removes the possibility of permanent incontinence of urine.

In those cases where the prostate is not too fibrous, adherent, or distinctly pedunculated, and, as a result of these, too high, room may even be had for dealing with the prostate without more than nicking the levator ani on both sides and retracting the transversus perinei forward after dividing the external sphincter ani and recto-urethral muscle. The size of the lateral lobe, however, will determine the extent to which division of the muscle is necessary, though with blunt dissection and thorough retraction sufficient room for enucleation in a large percentage of cases can be had.



R. B. McCall, M. D.:

Manage delivery so that no hemorrhage will take place—in other words, the very best treatment of *post-partum hemorrhage* is that which allows no bleeding to occur. This may be accomplished with a degree of certainty in this way. After delivery of placenta, seize uterus and compress firmly and persistently, while at same time a teaspoonful of reliable fluid extract of ergot is given. Camp at bedside with that firm grasp on uterus and never leave till well satisfied. If these things are done conscientiously, and not in a hurry, hemorrhage will be rare.

Happily to-day this is the practice of most physicians. But a score of years ago it was not so much in vogue; then hemorrhage of this kind was of frequent occurrence. However, in spite of precautions it may happen; then it were well to be prepared and doubly armed. Suddenly a gasp, a tremor, cheeks blanch, pulse stops—what is to be done? Hesitation is fatal; inactivity here is a ghastly mockery. Authors, textbooks, lecturers, and writers tell us to compress aorta, to ligate

limbs, to inject hot water, vinegar, turpentine, to knead cavity (walls rather) of uterus with fist, etc. Let us see how all this would work. Unchecked the woman will die in sixty seconds; five minutes to get syringe ready, five minutes to prepare water if already hot, or to skirmish around for vinegar or turpentine,—and what? The best measures for this emergency are those that entirely eliminate the element of delay found in all others.

That there is such means at the disposal of the physician may be questioned, but it has been shown there is. Listen to Professor Bedford, for his words are words of wisdom.

"Introduce your hand into the uterus, carry it up to the portion of the organ to which the placenta is partially attached, and with the expanded dorsum of the fingers make a gentle but uniform pressure against the bleeding vessels, with other hand applied to the abdomen make counter-pressure." But, "should the womb not contract without an instant's delay, employ the cold dash. Let a pitcher of ice water be thrown from a height, say two feet, suddenly upon the abdomen, and repeat without hesitation, should it be necessary.'"

It is safe to say this simple procedure has never failed. Desperate conditions demand heroic measures. Sudden impact produces desired effect, because of twofold shock communicated; womb contracts instantly and firmly, expelling everything contained. The writer is able to recall a case where hemorrhage came on before cord could be ligated, blood flowing in a large stream, flooding bed, soaking through it, and running in streams across the floor to fireplace on opposite side of room. Patient was almost exsanguinated and moribund. A pitcher of cold well water was quickly procured and dashed with some force upon abdomen, causing instant contraction of the uterus, which assumed the firmness of a solid ball. Hours of careful watching and nursing were required to establish a good circulation. Here the need to do right thing at right time was imperative—a minute's delay meant death. In less urgent cases cloths wet with cold water and applied will fulfill the indication. After object has been gained wet clothes and bed-clothes must be removed and warmth applied. No danger of taking cold, or from shock; only danger is a lack of decision, intelligence, and promptness.

Hunter Robb, M. D.:

The history of a case of *abdominal section, during pregnancy, for ovarian tumor*, and the chief points of interest in it are briefly as follows: Mrs. E. W. was admitted to the Gynecologic Ward June 12, 1906. She had been married four years, her age was nineteen, and her occupation housework. She had had two children, the first two years old, the second had died when five months old in December, 1905. No miscarriages. Her catamenia had been irregular, profuse, with cramp-like pains in the lower abdomen. The last menstrual period had appeared early in March, 1906. On admission she complained of a movable "lump" in the lower abdomen noticed during the previous month. This caused sharp and cutting pains when it changed its position. The pains in the abdomen had been more severe during the previous two days. She had had some discomfort since she became pregnant four months before, but she had had no special abdominal pains until one month previously, when the abdomen became sore and she began having sharp pains. At that time she noticed the mass mentioned above. The tumor mass had been tender on pressure. Of late the attacks of pain had reappeared every few days. Since she first noticed the mass it had grown in size. Three days before she was admitted to the hospital she began to have severe pains in the lower abdomen, with vomiting, and the tumor mass became even more sensitive. She had had no chills or fever. On admission the following note was made:

The patient is poorly nourished, but her general condition has no special bearing upon the case. On palpation, an ovoid mass can be outlined with its long axis lying transversely; it is rounded, smooth, firm, and somewhat elastic, it is movable in all directions but more so from side to side. Forced movements cause considerable pain. The percussion note over the mass is somewhat modified but tympanitic. The area of modification measures six by four inches. On admission her temperature was 99.4°, the pulse 108. In the hospital she has complained of occasional attacks of cramp-like pains in the lower abdomen which can be relieved by hot applications locally, together with codein internally.

On bimanual examination the cervix is found in the axis of the vagina; the uterus is movable and sagging in the pelvis, with the fundus forward. The uterus feels pregnant. The

right ovary is small and not adherent. The left ovary cannot be satisfactorily made out.

Diagnosis: Ovarian cystoma, with a twisted pedicle, together with a pregnant uterus.

She was sent into the hospital on account of the abdominal pain, which with the pregnant condition suggested a ruptured ectopic gestation. We were, however, able to exclude the latter condition on account of the position and movability of the tumor, and we felt sure that we were dealing with an ovarian cystoma and that the unusual, sharp pains meant that the pedicle was twisted.

Operation: At the time of the operation, on opening the abdominal cavity a considerable quantity of free serohemorrhagic fluid was found. The uterus was in anteposition, enlarged, softened, freely movable. The right tube and ovary appeared to be normal. Springing from the left side of the pelvis was the tumor felt on bimanual examination. This proved to be a smooth-walled cyst of the ovary, with a long pedicle, twice twisted on itself from right to left. The outer half of the tube was greatly swollen and congested, owing to its being caught in the torsion. The omentum was much thickened and congested. The appendix was free but intensely injected in its outer third. Left salpingo-oöphoro-cystectomy and partial excision of the omentum were performed.

Convalescence: Post-operative condition and recovery from ether were good. June 25, incision dressed; good union. July 10, patient discharged. Convalescence had been steady and uneventful. Patient now free from pain.

Vaginal examination: Cervix points downwards and backwards, is somewhat patulous. The uterus presses closely against the anterior abdominal wall, the fundus reaching half-way between the symphysis and umbilicus. No masses, no tenderness on the sides.

Pathologic Report (Dr. M. Bonta): The specimen consists of an irregularly ovoid mass, measuring three cm. by eight cm., consisting of a tube and an ovarian tumor. The surface of the tumor is smooth, glistening, deeply congested, and areas of ecchymosis are here and there noted. The tumor mass on palpation is fluctuant. It has a rather narrow, long pedicle, that has undergone torsion, in which the tube was caught at about the junction of its inner and middle third. The surface

of the tube is dark in color, and free from adhesions; its walls are greatly swollen. On cutting into the tumor mass, a brownish, chocolate-colored fluid is found in its interior. Throughout this are a great number of black hairs growing apparently from the tumor wall. Here and there are masses of softish, sebaceous material. There are several loculi to the tumor.

The tissues of these specimens are so densely infiltrated with blood that a microscopic examination is without value.

Diagnosis: Dermoid cyst of ovary, with twisted pedicle and hemorrhagic infiltration of the lateral structures.

♦ ♦

S. Cummings, M. D.:

On February 17th I was requested by Drs. Langs and G. S. Bingham, of Hamilton, to perform *Cæsarean section* on Mrs. P. The patient had been in labor for eighteen hours, the waters had ruptured, the forceps had been applied several times without result. On account of the pelvic contraction, the conjugate diameter being estimated at eight centimeters, it was considered that natural delivery would be impossible, so that the *Cæsarean section* was thought to offer the best chance for both the mother and the child. The patient was immediately removed to the hospital, and the operation at once proceeded with. The skin of the abdomen and the vagina were prepared in the usual way, the incision was made from two inches above the umbilicus to the pubes, and the peritoneum opened. The uterus was dislocated forwards out of the abdominal cavity, the intestines protected with moist gauze pads. The left ovarian vessels and round ligament were doubly clamped, and the tissues between them divided. This procedure was repeated on the right side, the bladder was then rapidly separated from the cervix by blunt dissection, the right uterine vessels were clamped, the vagina severed at the junction of the cervix, the uterus turned to the right and the right uterine vessels clamped, clamped, and the remains of the right broad ligament divided. The uterus was now handed to assistants who immediately incised it, extracting a living child, and ligated the umbilical cord. It was estimated that three minutes were occupied from the time of the initial incision until the assistants received the uterus. The broad ligaments and vessels were then ligated in the usual manner of a pan-hysterectomy, the vaginal vault was

closed with a continuous catgut suture and the peritoneum whipped over the vaginal stump. The gauze pads were removed, and the abdominal wound closed without drainage in the usual manner. The mother made an uneventful recovery and left the hospital on March 1st.

The advantages claimed for this method are the following:

(1) It can be rapidly and readily performed, no hysterectomy is so easy as a puerperal one. There is no comparison as regards celerity and ease when contrasted with a hysterectomy for fibroids. As a result of the pelvic contraction the uterus is very much elevated, the broad ligaments are stretched, and the vagina lengthened to an unusual degree so that the performance of the operation is very much facilitated.

(2) The operator is not detained by having to open the uterus, extract the child and placenta, and take care of the amniotic fluid if present. There is no need of undue haste in performance of the operation. Up to the time of clamping the uterine vessels there is abundant supply for the child, and it is probable that even one set of uterine vessels could supply enough blood to prevent asphyxiation of the child. There are cases on record where after the sudden death of the mother the child has been found alive at the end of half an hour.

It will be seen from the description of the operation that it is a pan-hysterectomy, or practically a Porro operation without opening the uterus for the delivery of the child and placenta.

It has in addition all the advantages claimed for the Porro operation over the Sanger Cæsarean section, namely, the uterus if infected is removed, thus obviating one of the dangers of sepsis. There is no fear of post partum hemorrhage or decomposition of the lochia. The mother is effectually sterilized, and in my opinion a patient who has once been subjected to the dangers of Cæsarean section should never be allowed to become pregnant again.



M. D. Wilkins, M. D.:

If it is possible from our personal experience with *pneumonia during pregnancy* to make any general deductions, they are as follows:

When fever attacks a patient during the early or the late months of pregnancy, the onset of labor is more likely to result than when the attack occurs in the middle months.

Fevers, in which the temperature goes through sudden and great variations are more likely to cause premature delivery than are those in which the temperature gradually attains a high range.

The higher the range of temperature, the more likely is the occurrence of premature delivery.

Where cyanosis is marked during the course of fever, premature delivery is very liable to take place.

The effects produced on the woman by the fever-poison, such as high temperature, delirium, cyanosis, etc., appear to be the cause of abortion, rather than the fever-poison itself. Many grave cases of even the most serious fevers have run their course without either causing premature delivery or the death of the child, and even when the former has occurred, a living child is most frequently born, though it is likely to succumb soon.

The onset of labor during the course of fever does not as a rule materially alter such course.

In a disease such for instance as pneumonia, where the temperature rises suddenly to a high level, often with severe rigors, and is maintained there, the liability to, indeed the probability of, premature delivery is very great, even especially in the early days of the disease, as we have before said. Again, later in the course of the disease there is a tendency to cyanosis, and an increased probability of premature delivery, if that event has not already occurred.

Pneumonia being a serious disease with a high mortality, it is natural that the latter should be raised by the complication of pregnancy. As it is an acute and asthenic disease, one would expect labor to be accomplished without artificial aid, and if delivery took place at an early stage in the pneumonia, the child to be born alive, and, if viable, to survive; while, if labor had been brought on by cyanosis, one would expect the cyanosis to have probably first caused the death of the child.



J. L. Wolfe, M. D.:

I have learned that *anteflexion* and *anteversion* in themselves—that is to say, as displacements merely and without narrowing of the uterine canal—are not necessarily pathological conditions of the womb. Text-books speak of them as such

and exhibit many ingenious forms of pessaries devised to rectify these so-called displacements. But very rarely, indeed, do I have to resort to them, and then only to a stem-pessary in antelexions, for I find in almost every virgin or every barren woman, that the womb in varying degrees is either bent forward or is tilted forward and is apparently resting on the bladder. The mistake made is in attributing to this natural position of the womb the various forms of pelvic trouble, especially that of irritability of the bladder to which women are so liable. But the sympathy between the brain and the bladder is a remarkably close one—so close, indeed, that some physiologists contend that “every mental act in man is accompanied by a contraction of the bladder.” The irritability of the bladder thus becomes one of the first symptoms of nervousness to which everyone is liable. Many a lawyer before pleading an important case, and many a clergyman before delivering a discourse, is compelled from sheer nervousness to empty the bladder. So it is with the lower animals which, when frightened, micturate involuntarily. A nervous bladder, then, is one of the earliest phenomena of a nervous brain, for nervousness means a deficient control of the higher nerve centers over the lower ones; a lack of brain control.

Now, a hysterical girl, or a woman whose nervous system has given away under the strain of domestic cares, consults the physician for such ordinary symptoms of nerve-exhaustion as wakefulness, utter weariness, a bearing-down feeling, backache and perhaps, above all, an irritable bladder. Upon making a digital examination he usually finds the fundus of the womb resting on the bladder, where it naturally should rest. At once he jumps to the conclusion that the whole trouble is due to pressure of the womb on the bladder: viz., to the existing natural anteversion, or to the antelexion, as the case may be. Enticed away by the vesical trouble from the bottom factor—the shattered nerves—he now makes local applications and racks his brain to adapt or devise some pessary capable of overcoming the supposed difficulty, heedless of the dilemma that the upward or shoving pressure of the pessary on the bladder must be greater than the counter or downward pressure of the womb, to which he attributes the vesical irritability.

Translations.

Indications for Rupture of the Membranes.—Rudaux (La Clinique) points out that the bag of waters is the most important agent in the dilatation of the cervix uteri, and should be kept intact, whether the head is engaged or not, so long as the contractions are normal and the dilatation incomplete. Therefore, when making a vaginal examination during a uterine contraction, the finger must not be allowed to press upon the membranes whilst they are tense, as there is a risk of causing premature rupture. Further, it is to be noticed that this tension of the membranes is apparent before the patient experiences the pain of the contraction, and calls attention to it. There are a variety of cases in which a rupture should be effected before the completion of dilatation. When the uterus is abnormally developed, either by excess of amniotic fluid, or by a multiple pregnancy, or by a very large fetus, it may happen that dilatation which has been progressing favorably becomes stationary, whilst the contractions continue or cease altogether. Under these circumstances, rupture of the membranes will cause the labor to resume its usual course.

When permanent tension of the membranes is diagnosed, the same indication exists, and the same result follows. In such cases there is no protrusion of the sac, the presenting part is well engaged in the pelvis, and the membranes are often very adherent to the lower uterine wall. The sac does not fulfill its physiological function, and prevents the fetal head, for the presentation is nearly always a vertex, from supplying its place.

Early rupture is advisable when the presentation has a tendency to displacement and is liable to become transverse, also after version by external manipulation when it is difficult to keep the fetus in the desired position. Unless the membranes are ruptured a prolapse of the cord can hardly be successfully dealt with, the funis must be carefully replaced behind the presenting part, which then descends, and further danger is avoided.

The most immediate indication for rupture is hemorrhage due to a placenta previa. If a large rent is made in the membranes they will cease to pull upon the placenta, and the additional pressure of the descending part will stop the bleeding. There should be no hesitation in rupturing when the condition of the mother or child calls for a speedy termination of the labor. Intervention is often required in twin pregnancies, since the second ovum may remain intact, the uterus being too

much exhausted to overcome the resistance of sac. When the sac does not rupture with strong contractions and after the completion of dilatation, there is no reason to wait. It is in the interest of both mother and child to bring labor to an end as soon as possible. Waiting favors a dissociation of the amnion and chorion, and may produce retention of the membranes during delivery.

Attempted Induction of Abortion by Intrauterine Injection of Fehling's Solution.—Tantzcher (*Zentralbl. f. inn. Med.*) states that a nurse, after missing two menstrual periods, attempted to induce abortion by the intrauterine injection of Fehling's solution. The syringe used was of 1-gram capacity, and was fitted with a nozzle suitable for urethral injections of cocaine. Shortly after the injection she was seized with severe abdominal pain and repeated vomiting. About midnight—fifteen minutes after the injection—the pulse was 52 and irregular. The pain became worse, and the patient was in constant dread. The cardiac sounds were faint and separated by distinct intervals, but were otherwise normal. Respiration was unaffected. The skin was cool. The pulse became more regular after hypodermic injections of camphor and morphine, but remained infrequent—48 to 52. The temperature was subnormal. At 1 a. m. undigested, slimy, brownish masses of rice were vomited. There was no uterine hemorrhage. At 3 a. m. the pulse had almost regained its normal regularity, but was still infrequent. At 3.30 it was 64, at 5.30, 86; the temperature had risen to 97.7° F. Later in the morning a slight hemorrhagic discharge from the vagina occurred. The urine contained red and white blood corpuscles, and renal, ureteral, and vesical epithelium. There was slight smarting on micturition; no casts were present. The quantity of urine was at first normal, but on the fourth day was reduced to 10½ oz. Later the amount again became normal, and on the fifth day the previously hemorrhagic urine regained its normal appearance. There were then a few leucocytes and some renal and ureteral epithelium, but no red corpuscles. A number of hyaline casts were found. On the tenth day the urine was normal in every respect. The acuteness of the onset of symptoms was somewhat alarming, but otherwise the patient was never in danger, and recovered rapidly. Nothing but a few clots were found in the vaginal discharge, and it could not be determined whether pregnancy had been interrupted. When the patient was discharged from hospital the size of the uterus corresponded to that of a two months' pregnancy.

The symptoms of poisoning by solutions of salts of copper are said to be cauterization of the buccal mucosa, salivation, tympanites, green vomit, and brownish-red watery stools. The pulse is small and the skin cold. In severe cases these symp-

toms may be followed by jaundice, paresis of the limbs, and collapse. Most of the copper is excreted by the liver, but, according to v. Jaksch, the kidneys almost always present signs of toxic nephritis. The fatal dose of copper, when taken per os, is said to be 154 grains to 184 grains of the acetate and 154 grains to 308 grains of the sulphate, though Hoffmann states that less than 10 grains of the sulphate may produce symptoms of poisoning. In this case less than one-twentieth of this amount produced alarming symptoms, 1 gram (about 17 minims) of Fehling's solution containing 0.034 gram, or slightly more than $\frac{1}{2}$ grain, of copper. Evidently intrauterine injection had an effect comparable to that of hypodermic injections in animals, which are followed by toxic nephritis. The urine becomes scanty, and usually contains albumin, and frequently blood. In animals paresis of the limbs is one of the most prominent symptoms. Whether this was present in this case could not be determined.

Acute Torsion of Both Fallopian Tubes.—Michel (*Comptes rendus de la Soc. d'Obstét., de Gyn. et de Pédiatr. de Paris*) reports that a married woman, aged thirty-five, twice pregnant, and without any history of pelvic disease, was seized with violent hypogastric pains a few days after a regular period. They remained very intense for a few hours, and the patient felt faint. Acute appendicitis was diagnosed, the pains subsided, and the patient was able to attend to housework, when a second attack of acute pain occurred within six weeks. Michel detected a swelling in the right iliac fossa, and another occupying the left and posterior fornix. He was inclined to believe that the masses represented retrouterine hematocele, recurrent, as is often the case, and it happened that profuse menorrhagia accompanied the second attack, increasing his suspicions. Abdominal section was undertaken in preference to colpotomy. The swellings proved to be dilated and obstructed tubes—the right, twisted four turns, was thin-walled and contained clear fluid; the left, twisted three turns, was thicker and contained blood. There was no evidence of tubal gestation; the primary condition was, without doubt, salpingitis. The right ovary was involved in the torsion of the corresponding tube. Michel amputated the uterus above the cervix, taking away the diseased appendages without detaching them from the cornua. The patient, when convalescent, declared that the pains had completely passed away.

The Mechanism of Cecal Hernias.—Cavaillon and Leriche (*Sem. Méd.*) treat of this subject in an article in which they point out that at the bottom of all descriptions of hernias of the cecum there is a strange error. Two mechanisms are admitted: sliding and pulling. Three great anatomical types

are described: (1) With complete sac, (2) with incomplete sac, (3) without a sac.

To explain these different varieties, all start alike with an anatomical description.

"The cecum is entirely surrounded by peritoneum, it is free in the iliac fossa; the hand can encircle it. It is only attached to the abdominal wall by the mesentery of the ascending colon, and the termination of the mesentery proper." "Sometimes the cecum has a short mesocecum. This is only the continuation of the mesentery of the ascending colon. The cecum is not free, and cannot be encircled by the hand." "Very rarely the cecum has its postero-external surface directly in contact with the cellular tissue of the iliac fossa." This being so, in order to get into a hernial passage, the cecum, by slipping, would descend with its serous covering; there would be transposition into the inguinal region of the contents of the iliac fossa; the three recognized dispositions of the hernial sac would correspond to the three anatomical dispositions of the cecal peritoneum; the free cecum without a mesentery would give the hernia with complete sac; the cecum with a mesentery the hernia with incomplete sac; the retroperitoneal cecum the hernia without a sac. This latter type could occur in another manner; if the sliding commences with the colon, that organ will bring in its train the cecum. Pulled by its upper extremity, the cecum, in order to follow, will fall head first, the body resting in the air above the hernial passage. In other cases, owing to prolonged distention, the cecal ligaments stretch, give way, and allow the cecum to be acted on by the unrestricted action of its inferior attachment. Briefly, the intestine rids itself of its peritoneal covering and slides into the cellular subperitoneal tissue. But in reality this cannot occur. For the peritoneal coat is that which carries the vessels of supply of the gut, and in consequence the gut, stripped of its peritoneum, cannot live. And if the cecum could be freed from its serous coat, it could not make its way beneath the peritoneum towards the inguinal canal. It would have to follow a course embryologically mapped out for it.

The cecum is never in the subperitoneal tissue, beneath a peritoneal layer which fixes it to the iliac wall. So the cecum, originally an intraperitoneal organ, remains so in the adult, whatever may be the appearance of its peritoneal covering. The operator cannot reach the cecum without traversing the two layers, the parietal and visceral peritoneum, embryologically fused, which always cover the muscular coat. Anatomically speaking, the hernia which appears to have an incomplete sac always has an entire peritoneal covering. And neither can a cecal hernia occur without a sac, for an intraperitoneal organ cannot reach a hernial passage without pushing before it a complete sac; only a subperitoneal organ, such as the blad-

der or the uterus, can do that. When surgeons speak of a cecal hernia without a sac they are right from an operative point of view, but pathologically wrong. When a cecum floats at the end of a mesentery, it can be carried into a hernial passage. The sac will be found to consist of visceral and parietal peritoneal layers separated. The fixed cecum, having descended into a hernia, will give the impression that it has an incomplete sac. This term "incomplete sac" should, pathogenically speaking, be dismissed from the terminology. On the other hand, the operator must never lose sight of the danger of suddenly coming upon the intestine at the point of attachment of the layers, and the necessity of preserving intact the natural adherence.

Enlarged Prostate.—Li Virghi (Gazz. degli Osped.) believes that enlarged prostate is the final result of chronic prostatitis, which is due to a prolonged slight toxinfection by the *Bacillus coli*. The enlargement of the prostate is simply the last stage of a chronic prostatitis, so that the subjects of a chronic prostatitis may consider themselves doomed to suffer from enlarged prostate in later times. In the author's view every prostatitis is of neurotic origin; an aseptic prostatitis does not exist. As a result of this slow toxinfection a slow process of sclerosis of the muscular tissue is set up, which extends from the prostate to the circular fibers at the neck of the bladder. It is this sclerotic process which causes the functional disturbances of micturition and retention. In the early stages of the prostatitis, the author says, cases can be cured by massage of the prostate and adjacent parts per rectum. Catheterism induces a mild form of massage, but the only effectual massage must be per rectum.

When to Get Up After Delivery.—Pierra (Prov. Méd.) discusses the important subject of how many days after her confinement a woman may begin to get up. Most of the authorities have advised that the rest in bed be as prolonged as possible, giving as a reason that the involution of the uterus is not complete until eighteen or twenty days after delivery. In the leisured class it is not unusual to find that twenty-five to thirty days is the period prescribed. It is, however, conclusively shown that involution is complete by the fourteenth day after the confinement at the very latest.

Pichevin has pointed out the disadvantages of prolonging the dorsal decubitus; it favors congestion and blood stasis in the pelvis; and a large uterus which is weighty, and of which the ligaments are relaxed, may undergo a more or less serious retrodeviation; also it exposes the patient to the inconvenience of subinvolution. The dorsal position will induce a

hypostatic congestion of the uterus, especially if it be retroflexed, which is analogous to the hypostasis of the pulmonary parenchyma, and which may be termed uterine hypostatic edema. Women of the more leisured class suffer specially from neuro-arthritic affections, and the tendency to congestion is met with only too frequently. It is possible to exaggerate the length of time in bed necessary after parturition, and unless contraindicated it is the author's custom to allow patients to get up towards the end of the second week with beneficial results.

Vaginal Cyst.—De Beule (*Journ. Méd. de Brux.*) describes a case of vaginal cyst on which he operated successfully. The patient was a healthy peasant, aged forty, married for about three years, and the mother of one child. The history was uneventful until about the age of thirty-four, when, on lifting a heavy weight one day, she experienced a sudden, tearing pain in the lower part of the abdomen, nearly turning her faint, and obliging her to take to bed. Several days of retention of urine, necessitating the use of the catheter, followed, but in three weeks she was again up and about her usual employments. Menstrual troubles, present already to a small extent, became more accentuated after this, with some dysuria and retention of urine and constipation. A tumor appeared at the vulva a few months after marriage, disappearing in the horizontal position; but at the end of the fourth month of pregnancy it disappeared altogether until after delivery. Then, however, the swelling recurred and gradually increased; but this time, instead of being soft and easily replaced inside the vagina, it was hard, elastic, and absolutely irreducible. When it came under the notice of the surgeon it filled the whole vaginal cavity, being about the size of an adult fist, with a very broad pedicle, inserted into the anterior superior cul-de-sac. Per rectum, it was felt projecting into the rectal ampulla, and rising higher than the fundus uteri, which was retroverted. The withdrawal by syringe of a citron-colored fluid proved it to be a cyst, and operation was agreed upon. The tumor was adherent to the posterior wall of the bladder in front, and behind it was so intimately in relation with the peritoneum that a laceration occurred during separation of the adhesions, and a loop of the sigmoid flexure prolapsed into the wound. It was returned, and the operation satisfactorily completed, the resulting urinary disturbances gradually passing off.

The case had been brought to De Beule as one of uterine polypus, and, after ascertaining its cystic nature, the next problem was to determine its origin. A Wolffian and an embryonic starting-point seemed both to be contraindicated, as also the occlusion of separate glands. From the history of the case and the anatomical relation of the parts, De Beule

inclines to the view that the strain at the age of thirty-four produced a vaginal hernia, with all its characteristics, disappearing when the pregnant uterus began to rise out of the pelvis. The second tumor he regards as a hydrocele developed in the empty hernial sac, its characteristics being analogous to those of a hydrocele of the testicle and a cyst of the cord.

Esthetic Removal of Benign Tumors of Breast.—Morestin (*Jour. de Chir. et Ann. de la Soc. Belge de Chir.*), with the aid of half a dozen clear illustrations, describes a method of removing benign tumors of the breast without leaving any apparent trace of surgical intervention. In this method, which the author has practiced in nine cases with good results, the growth is extirpated through a small incision made in the highest part of the axilla and in the middle of the hairy region. Between this incision and the growth a passage is made by undermining the skin and dividing the subcutaneous cellular tissue by scissors. The growth being fixed by the left hand, its capsule is opened and all its connections with the breast divided. On introducing a finger into the subcutaneous tunnel the surgeon will be enabled to make out the nature of the growth and its degree of mobility, and, if it be necessary, to complete the work of liberation by breaking down any remaining cellular bands. The growth, when it has been set free by subcutaneous dissection, is seized by long traction forceps and removed. This method, the author states, is more painful than removal by direct incision, but, from an esthetic point of view, gives an absolutely satisfactory result.

Myomectomy and Future Pregnancies.—Glockner (*Zentralbl. f. Gyn.*) recently related before a medical society a case which led to an instructive discussion. A woman, aged twenty-eight, married in January, 1904; in the following June, Menge performed myomectomy, removing not only a broad-based tumor of considerable size from the fundus, but also a number of smaller myomata. In January, 1906, the patient consulted Glockner. The last period had occurred on September 22, 1905. Pregnancy, under his observation, was free from complications. Delivery, quite spontaneous, took place on July 2d. The pains were strong and continuous. The child was a male, over seven pounds in weight. Aided by gentle pressure, the placenta followed half an hour later. The puerperium was uncomplicated; involution was normal, and no cicatrices could be defined on palpation of the uterus.

Glockner laid stress on the fact that gestation so soon followed the removal of the tumors; but he also observed that in pregnancy after Cæsarean section the uterine cicatrix often gave trouble, and that the same would probably be found to be the

case when myomectomy in young subjects became more frequent. The myomectomy wound at the best was far less likely to make a good cicatrix than the clean, direct incision made, without any enucleating maneuvers, through the normal uterus in Cæsarean section. Littauer stoutly denied this theory. He had enucleated a myoma 3 1-2 inches long and 2 3-4 inches in depth and in breadth; three hundred and eight days later the patient was safely delivered at term by Thies; at that date she was thirty-one years old. Labor lasted over twenty hours; the pains were distressing, so the forceps was about to be applied, when some sharp contractions set in after rupture of the membranes, and the child was delivered. Much flooding followed, and the placenta was expelled by Credé's method; it adhered strongly to the uterine walls at the left of the fundus, at which point cicatricial tissue could be felt on careful palpation. The flooding ceased after hot douching and doses of ergot, and the puerperium was uncomplicated. Thus, although the labor was complicated, the cicatrix did not yield. The patient became pregnant once more, and a subserous myoma of the size of a hen's egg developed, but Thies could not trace a further history. Abel related a case where a myoma as big as an apple was enucleated from the anterior wall of the uterus. The patient had twice aborted at the second month. After the myomectomy she bore two children to term, then a small myoma developed and grew in the anterior wall, and a third abortion ensued. Abel did not believe that there was much fear of rupture of an old myomectomy scar during labor.

Metallic Sutures in the Treatment of Fractured Ribs.—Szczypiorski (*Bull. et Mém. de la Soc. de Chir.*) reports a case of severe injuries to a boy, aged twelve, who was run over by a vehicle. These injuries consisted in complete rupture of the posterior part of the urethra, disjunction of the pubic symphysis, and depressed fracture of the left side of the chest in the mammary region. Eight days after the date of the injury, the urethral lesion having in the interval been successfully treated, the author, with the object of restoring the normal conditions of respiratory amplitude, exposed the deeply-depressed fractures of three ribs—the third, fourth, and fifth—by raising a U-shaped flap. The fractured ribs having been elevated, the ends of the third and fourth were brought together, and fixed in their normal positions by sutures of silver wire. The two fragments of the fifth rib, as their ends remained in contact after reduction, were not sutured. The margins of the torn pericostum were brought together over each fracture and united by catgut sutures. This operation proved successful, and when the patient had recovered from the effects of his severe acci-

dent, a radiograph of the chest showed that the ribs had perfectly united, and that the thoracic wall at the seat of injury had regained its normal contour. In a report on this case communicated to the Société de Chirurgie, Lejars states that, though this method of dealing with fractured ribs is rarely indicated, cases certainly occur from time to time in which it might be advisable to extend beyond its usual limits the reparative surgery of the thoracic wall.

Perforated Gastric and Duodenal Ulcers.—Without touching on the technique of operations for perforated gastric and duodenal ulcers, von Eiselsberg (*Deut. med. Woch.*) discusses the treatment of this accident, and details his own experience. He does not consider that one is justified in excluding from the accounts and statistics cases which were operated on in a moribund condition, since these cases undoubtedly turn up among every series of cases. His own cases number 12, and of these he was successful in 5; 4 of the patients were moribund on admission. Of the 5 patients who recovered, 2 were operated on within the first twelve hours; 2 were operated on twenty-four hours after the perforation had taken place, and 1 was operated on two days after the perforation had taken place. Of the 7 fatal cases, 2 were operated on during the first day, 3 during the second day, and 1 each during the third and fourth days. The prognostic importance of operating as early as possible is, therefore, shown fairly well in his cases. He has carried out jejunostomy for the purpose of feeding the patient after the operation through the fistula in 7 cases, and has received the impression that this procedure improves the chances of recovery. Even in 2 fatal cases he believes that he could see the benefit of the procedure, and he recites the histories of these cases, in which it appeared that marked improvement took place after jejunostomy had been performed in a patient of fifty-seven years, who was suffering from the perforation of a gastric carcinoma, but who died of renewed peritonitis symptoms, which a second laparotomy was unable to relieve. The second case was that of a man with volvulus of the sigmoid flexure and perforated gastric ulcer, and in whom gangrene of the bowel had already set in. The operation was only performed in order to make a last desperate attempt to save a lost life. He improved considerably for a couple of days, to everyone's astonishment, under artificial feeding though the fistula, but then relapsed and died. As soon as the fistula is no longer required, one can take out the tube and it heals up spontaneously. He then discusses the question of employing a tampon or drain, or of closing up the abdomen at once. In two cases the latter method was followed; of these one died of suppuration in the neighborhood of the

suture in the stomach wall on the eleventh day, and the other recovered. He believes now that the use of a tampon is required in cases of diffuse peritonitis. The tampon which he finds best is Gersuny's wick or strands of closely-woven cotton threads. The advantages are that it is unnecessary to reintroduce the tampons after they have once been removed. The tampon is gradually withdrawn, and in this way the patient is saved pain and the wound is not torn open again. Without wishing to draw conclusions from the fact, he mentions that of his five successful cases, the three which were treated with jejunostomy remained well without any recurrence of gastric symptoms, while one of the other two had a return of them. The numbers are naturally too small to form any conclusions. The duty of the general practitioner is, therefore, to send his perforated gastric ulcer patients as early as possible for operation into a hospital or home.

Retroversion of Pregnant Uterus.—Rudaux (La Clinique) finds that it is not uncommon to be consulted during the third or fourth month of pregnancy by patients on account of an inability to micturate, or for painful micturition, or a continual involuntary loss of urine, which causes irritation or even excoriation of the external parts. This is not incontinence, but an overflow micturition due to retention. An examination will show a large regular fluctuating tumor lying over the pubes and bearing no relation to the period of the pregnancy; the tumor will also disappear upon catheterization. In such cases it is often difficult to pass a catheter, since the meatus is drawn back into the vagina. When the bladder has been emptied it is possible to define the uterine tumor with the cervix lying behind the symphysis pubis and the fundus retroverted. Spontaneous reduction may result from the maintenance of the dorsal decubitus and the careful emptying of the bladder and relief of the bowels daily, but if general symptoms supervene or hematuria or cystitis occurs, intervention is necessary.

Manual reduction is usually possible; with the patient in the obstetrical position the right hand is introduced in the form of a cone into the vagina, the palmar surface is directed forwards, and the fingers spread out so as to grasp the lowest part of the uterus. If the fundus is movable it should be directed towards the left side so as to avoid the sacral promontory, and pressure is then exerted upon the whole available uterine surface in a direction from below upwards, at the same time the left hand over the pubes brings pressure to bear upon the cervix and vagina. After reduction, rest in bed is required with a subcutaneous injection of morphine and subsequent care during the next fortnight. When reduction is not obtained, another attempt should be made upon the next day,

with the patient either in the genu-pectoral position or under the influence of a general anesthetic. When one is repeatedly unsuccessful and unfavorable symptoms manifest themselves, recourse must be made to laparotomy, in the Trendelenburg position. It is easy to see where the obstruction lies, and to bring the uterus into position again. It is well to assure the position by shortening the round ligaments according to the method of Doléris. Before intervention the patient should be given an injection of morphine, which should be repeated daily for some days. When a woman has suffered from retroversion during pregnancy, measures should be taken to avoid a similar deviation occurring at the time when the uterus falls back into the pelvic cavity. A Hodge pessary is therefore inserted and left in position during the whole period of involution—that is to say, for about six weeks. It is more prudent to leave it in until three months have elapsed, and until one is sure that the retrodeviation is perfectly reduced.

Bloodless Methods of Artificial Dilatation of the Cervix.—Lewi (Archiv di Gyn. Obst.) discusses the methods of bloodless dilatation of the cervix uteri at term, and gives an extensive review of the literature of this subject. He considers in turn (1) the manual method; (2) the introduction into the lower uterine segment or into the cervix, of bags to be filled with fluid; and (3) the use of metallic dilators. Dilatation of the os by tents, it is stated, has never been extensively practiced at full term, and as a method of assisting delivery need not be mentioned. The author holds that the classical manual method, in which the fingers and hand are pushed as a cone from below, should be practically discarded as unphysiological, difficult, and dangerous. On the other hand, the bimanual method originally introduced by Edgar and recently revived by Bonnaire, when performed under proper precautions with educated fingers, and without undue roughness or haste, is most useful in the great majority of cases in which as quick a delivery as can safely be accomplished is demanded. With the experienced and educated hand of the trained obstetrician, this is as quick as any mechanical method which depends on force for dilating rigid tissues; and it has the further advantage that when practiced by the inexpert, less harm is likely to be done than by the use of complicated instruments. In the inelastic bags of Champetier de Ribes and of Vorhees we have, the author states, a method of fairly rapid dilatation which fulfills physiological conditions, and is the least dangerous of any. In placenta previa it is held to be the method *par excellence*. In studying recent literature on bloodless dilatation of the cervix the author has come to the conclusion that the advocates of the branching metallic dilators, especially those of the Bossi type, have failed to make out a case. All

the branching instruments are complicated and composed of a very large number of parts, and as they are difficult to clean, are dangerous as carriers of infection. The great fault of all is the difficulty in controlling their action on the tissues of the os and cervix. There is, it is stated, much evidence, especially in Germany, that the Bossi method not only fails in many instances, but often causes serious laceration. In his concluding remarks Lewi asserts that the rigid os, of which so much is heard, is extremely rare. When it does exist it cannot be dilated by any bloodless method. The consistent and careful use of some suitable form of bag, or, if haste be demanded, the bimanual method, will overcome the cases of loose os about as quickly as the Bossi method, and always more safely.

Missed Abortion: Twin Pregnancy.—For obvious reasons "missed abortion" is a subject of some importance. Dr. Wirtz has recently reported an authentic case, watched through its whole course from the abortion to the delivery of the ovum, which proved to be of the true or one-yolk, twin type (Ein an sich seltenes Zwillingssei von einer Missed Abortion stammend. Report of meeting of Gesellschaft für Geb. u. Gyn. zu Köln a. Rh., Monatsschr. f. Geb. u. Gyn.): A woman of twenty-five, already twice pregnant, became so for a third time, the last period appearing at the beginning of May, 1904. On September 10th slight hemorrhage set in, with labor-like pains, which were severe. The symptoms subsided after a week's rest in bed, when morphine was administered; it was then suspected that labor had not really been interrupted. By December, however, the distention of the abdomen was hardly perceptible. On February 15, 1905, hemorrhage and pains set in suddenly during the night, and at the end of an hour an ovum was expelled entire, simultaneously with the placenta. There was much liquor amnii, so that the ovum was tense. On laying open the membranes a pair of twins were discovered in separate amniotic cavities, both somewhat shrunken, though otherwise well developed and free from malformations. They were males, of about 4¾ in. in length. The placenta was rather big and tough. Very little blood was lost during the expulsion of the ovum, and involution followed speedily. Wirtz at the same time reported a case of fleshy mole retained in the uterus for five months.

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